# Notice Inviting Quotation (E-Procurement mode)
## कोटेशन को आमंत्रित करने की सूचना (इ-प्रोक्योर्मेंट मोड)

**INDIAN INSTITUTE OF TECHNOLOGY DELHI**
**भारतीय प्रौद्योगिकी संस्थान दिल्ली**
**HAUZ KHAS, NEW DELHI-110016**
**हौज ख़ास, नई दिल्ली -110016**

**Dated/ दिनांक: 08/11/2019**

**Open Tender Notice No. / खुला प्रस्ताव निविदा सूचना नंबर: IITD/BEEN(SP-2665)/2019**

Indian Institute of Technology Delhi is in the process of purchasing following item(s) as per details as given as under.
इंडियन इंस्टीट्यूट ऑफ टेक्नोलॉजी दिल्ली निम्नलिखित मदों की खरीद की प्रक्रिया में है।

| | |
|---|---|
| **Details of the item**<br>आइटम का विवरण | **DC & Noise System Solution** |
| **Earnest Money Deposit to be submitted**<br>बयाना जमा करने के लिए जमा राशि | **NIL** |
| **Warranty**<br>वारंटी अवधि | Comprehensive warranty for 3 years as per the details mentioned in the technical specification S.No.21 |
| **Performance security**<br>निष्पादन सुरक्षा | **10% of FOB value (to be kept as bank guarantee for the period of standard and extended warranty)** |
| **Delivery Schedule** | **16 weeks after PO delivery** |

Tender Documents may be downloaded from Central Public Procurement Portal http://eprocure.gov.in/eprocure/app . Aspiring Bidders who have not enrolled / registered in e-procurement should enroll / register before participating through the website http://eprocure.gov.in/eprocure/app . The portal enrolment is free of cost. Bidders are advised to go through instructions provided at ‘Instructions for online Bid Submission’.
निविदा दस्तावेज केन्द्रीय सार्वजनिक खरीद पोर्टल http://eprocure.gov.in/eprocure/app से डाउनलोड हो सकते हैं ई-प्रोक्योरमेंट में पंजीकृत नहीं होने वाले इच्छुक बोलीदाताओं को वेबसाइट http://eprocure.gov.in/eprocure/app के माध्यम से भाग लेने से पहले पंजीकरण करना चाहिए। पोर्टल नामांकन मुफ्त है बोलीदाताओं को सलाह दी जाती है कि 'ऑनलाइन बोली के लिए निर्देश' पर दिए गए निर्देशों के माध्यम से जाने की सलाह दी जाए।

Tenderers can access tender documents on the website (For searching in the NIC site, kindly go to Tender Search option and type ‘IIT’. Thereafter, Click on “GO” button to view all IIT Delhi tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website http://eprocure.gov.in/eprocure/app as per the schedule given in the next page.
निविदाकर्ता वेबसाइट पर निविदा दस्तावेज का उपयोग कर सकते हैं (एनआईसी साइट में खोज के लिए, कृपया निविदा खोज विकल्प और 'आईआईटी' टाइप करें। उसके बाद, सभी आईआईटी दिल्ली निविदाओं को देखने के लिए "गो" बटन पर क्लिक करें) उपयुक्त निविदा का चयन करें और उन्हें सभी प्रासंगिक सूचनाओं से भरें और वेबसाइट पर http://eprocure.gov.in/eprocure/app पर पूरा निविदा दस्तावेज ऑनलाइन जमा करें। अगले पृष्ठ में दिए गए कार्यक्रम के अनुसार

No manual bids will be accepted. All quotation (both Technical and Financial should be submitted in the E-procurement portal).
कोई मैन्युअल बोली स्वीकार नहीं की जाएगी। सभी कोटेशन (तकनीकी और वित्तीय दोनों को ई-प्रोक्योरमेंट पोर्टल में जमा करना चाहिए)

# SCHEDULE

| | |
|---|---|
| Name of Organization | Indian Institute of Technology Delhi |
| Tender Type (Open/Limited/EOI/Auction/Single/Global) | Open Tender |
| Tender Category (Services/Goods/works) | Goods |
| Type/Form of Contract (Work/Supply/ Auction/ Service/ Buy/ Empanelment/ Sell) | BUY |
| Product Category (Civil Works/Electrical Works/Fleet Management/ Computer Systems) | Equipment |
| Source of Fund (Institute/Project) | Budget Code _Nonrecurring/ Project Code PLN01/HF03 and Institute |
| Is Multi Currency Allowed | YES |
| Date of Issue/Publishing | 08/11/2019 (15:00 Hrs) |
| Document Download/Sale Start Date | 08/11/2019 (15:00 Hrs) |
| Document Download/Sale End Date | 06/12/2019 (15:00 Hrs) |
| Date for Pre-Bid Conference | --- |
| Venue of Pre-Bid Conference | --- |
| Last Date and Time for Uploading of Bids | 06/12/2019 (15:00 Hrs) |
| Date and Time of Opening of Technical Bids | 09/12/2019 (15:00 Hrs) |
| Tender Fee | Rs.____NIL_______/- (For Tender Fee)<br>Rs.____NIL_______/- (For EMD)<br>(To be paid through RTGS/NEFT. IIT Delhi Bank details are as under:<br>Name of the Bank A/C : IITD Revenue Account<br>SBI A/C No. : 10773572622<br>Name of the Bank : State Bank of India, IIT Delhi, Hauz Khas, New Delhi-110016<br>IFSC Code : SBIN0001077<br>MICR Code : 110002156<br>Swift No. : SBININBB547<br>(This is mandatory that UTR Number is provided in the on-line quotation/bid. (Kindly refer to the UTR Column of the Declaration Sheet at Annexure-II) |
| EMD | |
| No. of Covers (1/2/3/4) | 02 |
| Bid Validity days (180/120/90/60/30) | 90 days (From last date of opening of tender) |
| Address for Communication | **Prof. Abhisek Dixit**<br>Department of Electrical Engineering<br>Indian Institute of Technology,<br>Hauz Khas, New Delhi – 110016 |
| Contact No. | (+91)-11- 26591156 |
| Email ID | adixit@ee.iitd.ac.in |

**Chairman Purchase Committee**
**(Buyer Member)**

## Instructions for Online Bid Submission/ ऑनलाइन बोली (बिड) के लिए निर्देश:

As per the directives of Department of Expenditure, this tender document has been published on the Central Public Procurement Portal (URL:http://eprocure.gov.in/eprocure/app). The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

व्यय विभाग के निर्देशों के अनुसार, यह निविदा दस्तावेज केंद्रीय सार्वजनिक प्रापण पोर्टल (यूआरएल: http: //eprocure.gov.in/eprocure/app) पर प्रकाशित किया गया है। बोलीदाताओं को मान्य डिजिटल हस्ताक्षर प्रमाण पत्र का उपयोग करते हुए सीपीपी पोर्टल पर इलेक्ट्रॉनिक रूप से अपनी बोलियों की सॉफ्ट प्रतियां जमा करना आवश्यक है। सीपीपी पोर्टल पर पंजीकरण करने के लिए निविदाकर्ताओं की सहायता करने के लिए नीचे दिए गए निर्देशों का मतलब है, सीपीपी पोर्टल पर आवश्यकताओं के अनुसार अपनी बोलियां तैयार करें और अपनी बोलियां ऑनलाइन जमा करें।

More information useful for submitting online bids on the CPP Portal may be obtained at:

अधिक जानकारी सीपीपी पोर्टल पर ऑनलाइन बोलियां जमा करने के लिए उपयोगी हो सकती है:

http://eprocure.gov.in/eprocure/app

## REGISTRATION

1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL:http://eprocure.gov.in/eprocure/app) by clicking on the link "Click here to Enroll". Enrolment on the CPP Portal is free of charge.

   बोलीदाताओं को "नामांकन के लिए यहां क्लिक करें" लिंक पर क्लिक करके सेंट्रल पब्लिक प्रोक्युरमेंट पोर्टल (यूआरएल: http: //eprocure.gov.in/eprocure/app) के ई-प्रोक्योरमेंट मॉड्यूल पर भर्ती करना आवश्यक है। सीपीपी पोर्टल पर नामांकन नि: शुल्क है

2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

   नामांकन प्रक्रिया के भाग के रूप में, बोलीदाताओं को अपने खाते के लिए एक अद्वितीय उपयोगकर्ता नाम चुनना होगा और एक पासवर्ड प्रदान करना होगा।

3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.

   बोलीदाताओं को सलाह दी जाती है कि पंजीकरण प्रक्रिया के भाग के रूप में अपना वैध ईमेल पता और मोबाइल नंबर पंजीकृत करें। इन का उपयोग सीपीपी पोर्टल से किसी भी संचार के लिए किया जाएगा।

4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.), with their profile.

   नामांकन पर, बोलीदाताओं को सीसीए इंडिया द्वारा मान्यता प्राप्त किसी प्रमाणन प्राधिकरण द्वारा जारी किए गए अपने मान्य डिजिटल हस्ताक्षर प्रमाण पत्र (कक्षा द्वितीय या कक्षा III प्रमाण पत्र के साथ महत्वपूर्ण उपयोग पर हस्ताक्षर करने) की आवश्यकता होगी (जैसे सिफी / टीसीएस / एनकोड / ई-मुद्रा आदि) , उनके प्रोफाइल के साथ

5) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.

   केवल एक मान्य डीएससी एक बोलीदाता द्वारा पंजीकृत होना चाहिए। कृपया ध्यान दें कि निविदाकर्ता यह सुनिश्चित करने के लिए ज़िम्मेदार हैं कि वे अपने डीएससी को दूसरों को उधार नहीं देते हैं जिससे दुरुपयोग हो सकता है।

6) Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / eToken.

बोलीदाता फिर अपने यूजर आईडी / पासवर्ड और डीएससी / ईटीकेन के पासवर्ड को दर्ज करके सुरक्षित लॉग-इन के माध्यम से साइट पर लॉग ऑन करता है।

## SEARCHING FOR TENDER DOCUMENTS/ निविदा दस्तावेजों के लिए खोजना

1) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.

   सीपीपी पोर्टल में निर्मित विभिन्न खोज विकल्प हैं, ताकि बोलीदाताओं को कई मापदंडों से सक्रिय निविदाएं खोज सकें। इन मापदंडों में निविदा आईडी, संगठन का नाम, स्थान, तिथि, मूल्य आदि शामिल हो सकते हैं। निविदाओं के लिए उन्नत खोज का एक विकल्प भी है, जिसमें बोलीदाता कई नामों को जोड़ सकते हैं जैसे संगठन का नाम, अनुबंध का स्थान, स्थान, सीपीपी पोर्टल पर प्रकाशित निविदा की खोज के लिए तारीख, अन्य कीवर्ड आदि।

2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective ‘My Tenders’ folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

   बोलीदाताओं ने एक बार निविदाएं चुनी हैं जिसमें वे रुचि रखते हैं, उसका वे आवश्यक दस्तावेज / निविदा कार्यक्रम डाउनलोड कर सकते हैं। ये निविदाएं 'मेरी निविदाओं' फ़ोल्डर में ले जाई जा सकती हैं। इससे सीपीपी पोर्टल को बोलीदाताओं को एसएमएस / ई-मेल के माध्यम से सूचित किया जा सकता है, यदि निविदा दस्तावेज में कोई शुद्धि जारी कि गई है।

3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

   बोलीदाता को प्रत्येक निविदा को निर्दिष्ट अद्वितीय निविदा आईडी का नोट बनाना चाहिए, अगर वे हेल्पडेस्क से कोई स्पष्टीकरण / सहायता प्राप्त करना चाहते हैं।

## PREPARATION OF BIDS / बोली (बिड) की तैयारी

1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.

   बोलीदाता को अपनी बोलियां जमा करने से पहले निविदा दस्तावेज पर प्रकाशित किसी भी शुद्धि को ध्यान में रखना चाहिए।

2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

   कृपया बोली के भाग के रूप में जमा किए जाने वाले दस्तावेजों को समझने के लिए निविदा विज्ञापन और निविदा दस्तावेज ध्यान से देखें। कृपया उन अंकों की संख्या पर ध्यान दें जिन में बोली दस्तावेज जमा करना है, दस्तावेजों की संख्या - जिसमें प्रत्येक दस्तावेज के नाम और सामग्री शामिल हैं, जिन्हें प्रस्तुत करने की आवश्यकता है। इनमें से कोई भी विचलन बोली को अस्वीकार कर सकता है।

3) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black and white option.

   बोलीदाता, अग्रिम में, निविदा दस्तावेज / अनुसूची में बताए अनुसार प्रस्तुत करने के लिए बोली दस्तावेज तैयार करना चाहिए और आम तौर पर, वे पीडीएफ / एक्सएलएस / आरएआर / डीडब्ल्यूएफ स्वरूपों में हो सकते हैं। बोली दस्तावेजों को 100 डीपीआई के साथ काले और सफेद विकल्प स्कैन किया जा सकता है।

4) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can

use “My Space” area available to them to upload such documents. These documents may be directly submitted from the “My Space” area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

मानक दस्तावेजों के एक ही सेट को अपलोड करने के लिए आवश्यक समय और प्रयास से बचने के लिए जो प्रत्येक बोली के भाग के रूप में जमा करने के लिए आवश्यक हैं, ऐसे मानक दस्तावेज अपलोड करने का प्रावधान (जैसे पैन कार्ड कॉपी, वार्षिक रिपोर्ट, लेखा परीक्षक प्रमाण पत्र आदि) ) बोलीदाताओं को प्रदान किया गया है। ऐसे दस्तावेजों को अपलोड करने के लिए बोलीकर्ता उनके लिए उपलब्ध "मेरा स्पेस" क्षेत्र का उपयोग कर सकते हैं। बोली जमा करते समय ये दस्तावेज़ सीधे "मेरा स्पेस" क्षेत्र से जमा किए जा सकते हैं, और उन्हें बार-बार अपलोड करने की ज़रूरत नहीं है इससे बोली जमा प्रक्रिया के लिए आवश्यक समय में कमी आएगी।

## SUBMISSION OF BIDS/ बोली (बिड) का जमा करना

1) Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.

   बोलीदाता को बोली प्रस्तुति के लिए अच्छी तरह से साइट पर लॉग इन करना चाहिए ताकि वह समय पर बोली अपलोड कर सके या फिर बोली प्रस्तुत करने के समय से पहले। अन्य मुद्दों के कारण किसी भी देरी के लिए बोलीदाता जिम्मेदार होगा।

2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.

   बोलीदाता को निविदा दस्तावेज में दर्शाए अनुसार एक-एक करके आवश्यक बोली दस्तावेजों को डिजिटल हस्ताक्षर और अपलोड करना होगा।

3) Bidder has to select the payment option as “on-line” to pay the tender fee / EMD as applicable and enter details of the instrument. Whenever, EMD / Tender fees is sought, bidders need to pay the tender fee and EMD separately on-line through RTGS (Refer to Schedule, Page No.2).

   बोलीदाता को निविदा शुल्क / ईएमडी को भुगतान के लिए "ऑन लाइन" के रूप में भुगतान विकल्प चुनना होगा और उपकरण का विवरण दर्ज करना होगा। जब भी, ईएमडी / निविदा शुल्क की मांग की जाती है, बोलीदाताओं को टेंडर शुल्क और ईएमडी अलग-अलग आरटीजीएस के माध्यम से ऑन लाइन पर भुगतान करने की आवश्यकता होती है (अनुसूची, पेज नं .2 देखें)।

4) A standard BoQ format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BoQ file, open it and complete the white colored (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.

   एक मानक BoQ प्रारूप को सभी बोलीदाताओं द्वारा भरने के लिए निविदा दस्तावेज प्रदान किया गया है। बोलीदाताओं को इस बात का ध्यान रखना चाहिए कि उन्हें आवश्यक प्रारूप में अपनी वित्तीय बोली जमा करनी चाहिए और कोई अन्य प्रारूप स्वीकार्य नहीं है। बोलीकर्ताओं को BoQ फाइल को डाउनलोड करने, इसे खोलने और अपने संबंधित वित्तीय उद्धरण और अन्य विवरण (जैसे बोलीदाता का नाम) के साथ सफेद रंगीन (असुरक्षित) कोशिकाओं को पूरा करना आवश्यक है। कोई भी अन्य कक्ष नहीं बदला जाना चाहिए। एक बार विवरण पूरा हो जाने पर, बोलीदाता को इसे सहेजना होगा और इसे ऑनलाइन जमा करना होगा, बिना फ़ाइल नाम बदलना। यदि BOQ फ़ाइल को बोलीदाता द्वारा संशोधित किया गया है, तो बोली को खारिज कर दिया जाएगा।

5) The server time (which is displayed on the bidders’ dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.

   सर्वर का समय (जो बोलीदाताओं के डैशबोर्ड पर प्रदर्शित होता है) बोलीदाताओं द्वारा बोलियों को खोलने के लिए समय सीमा को संदर्भित करने के लिए मानक समय के रूप में माना जाएगा। बोलीदाताओं को खोलना आदि। बोलीदाताओं को बोली प्रस्तुत करने के दौरान इस समय का पालन करना चाहिए।

6) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the

time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.

बोलीदाताओं द्वारा प्रस्तुत सभी दस्तावेज पीकेआई एन्क्रिप्शन तकनीकों का उपयोग करके एन्क्रिप्ट किया जाएगा जिससे डेटा की गोपनीयता सुनिश्चित हो सके। दर्ज किए गए डेटा को अनधिकृत व्यक्तियों द्वारा बोली खोलने के समय तक नहीं देखा जा सकता है। बोलियों की गोपनीयता को सुरक्षित सॉकेट लेयर 128 बिट एन्क्रिप्शन तकनीक का उपयोग कर रखा जाता है। संवेदनशील क्षेत्रों का डेटा संग्रहण एन्क्रिप्शन किया जाता है।

7) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

अपलोड किए गए निविदा दस्तावेज केवल अधिकृत बोलीदाता द्वारा निविदा खोलने के बाद ही पठनीय हो सकते हैं।

8) Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

बोलियों के सफल और समय पर जमा होने पर, पोर्टल एक सफल बोली प्रस्तुत करने का संदेश देगा और एक बोली सारांश बोली संख्या के साथ प्रदर्शित किया जाएगा। और अन्य सभी प्रासंगिक विवरणों के साथ बोली प्रस्तुत करने की तारीख और समय।

9) Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

कृपया अनुपालन पत्रक की एक पीडीएफ फाइल में सभी प्रासंगिक दस्तावेजों के स्कैन किए गए पीडीएफ़ को जोड़ दें।

## ASSISTANCE TO BIDDERS / बोलीदाताओं को सहायता

1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.

निविदा दस्तावेज से संबंधित कोई भी प्रश्न और इसमें निहित नियमों और शर्तों को निविदा आमंत्रण प्राधिकरण को निविदा के लिए या निविदा में वर्णित प्रासंगिक संपर्क व्यक्ति से संबोधित किया जाना चाहिए।

2) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is 1800 233 7315.

ऑनलाइन बोली प्रस्तुत करने या सामान्य में सीपीपी पोर्टल से संबंधित प्रश्नों की प्रक्रिया से संबंधित कोई भी प्रश्न 24x7 सीपीपी पोर्टल हैल्पडेस्क पर निर्देशित किया जा सकता है। हेल्पडेस्क के लिए संपर्क संख्या 1800 233 7315 है

## General Instructions to the Bidders / बोलीदाताओं के लिए सामान्य निर्देश

1) The tenders will be received online through portal http://eprocure.gov.in/eprocure/app . In the Technical Bids, the bidders are required to upload all the documents in .pdf format.
निविदाएं पोर्टल http://eprocure.gov.in/eprocure/app के माध्यम से ऑनलाइन प्राप्त होंगी तकनीकी बोलियों में, बोलीदाताओं को सभी दस्तावेजों को। पीडीएफ प्रारूप में अपलोड करना होगा।

2) Possession of a Valid Class II/III Digital Signature Certificate (DSC) in the form of smart card/e-token in the company's name is a prerequisite for registration and participating in the bid submission activities through https://eprocure.gov.in/eprocure/app. Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the web site https://eprocure.gov.in/eprocure/app under the link “Information about DSC”.
कंपनी के नाम में स्मार्ट कार्ड / ई-टोकन के रूप में मान्य क्लास II / III डिजिटल हस्ताक्षर प्रमाण पत्र (डीएससी) के पंजीकरण के लिए एक शर्त है और https://eprocure.gov.in/eprocure/ के माध्यम से बोली प्रस्तुत करने की गतिविधियों में भाग ले सकते है। डिजिटल हस्ताक्षर प्रमाण पत्र अधिकृत प्रमाणित एजेंसियों से प्राप्त की जा सकती है, जिनमें से जानकारी "डीएससी के बारे में सूचना" लिंक के तहत वेब साइट https://eprocure.gov.in/eprocure/app पर उपलब्ध है।

3) Tenderer are advised to follow the instructions provided in the ‘Instructions to the Tenderer for the e-submission of the bids online through the Central Public Procurement Portal for e Procurement at https://eprocure.gov.in/eprocure/app.
निविदाकर्ता को सलाह दी जाती है कि वे निविदाकार को निर्देश दिए गए हों ताकि ई-प्रोक्योरमेंट के लिए सेंट्रल पब्लिक प्रोकॉर्ममेंट पोर्टल के जरिए https://eprocure.gov.in/eprocure/app पर ऑनलाइन निविदाएं जमा कर सकें।

**Central Research Facility**
**Indian Institute of Technology**
**Hauz Khas, New Delhi-110 016**

## NOTICE INVITING QUOTATIONS

**Subject: DC & Noise System Solution**

### Invitation for Tender Offers

Indian Institute of Technology Delhi invites online Bids (Technical bid and Commercial bid) from eligible and experienced OEM (Original Equipment Manufacturer) OR OEM Authorized Dealer for **DC and Noise system, mandatorily comprising of (A) DC Probe station, (B) Semiconductor Parametric Analyzer, (C) Flicker Noise Measurement system with 14ch Low Leakage Switch Mainframe and 2.0m Rack Cabinet accessories** with (warranty period as stated under technical specifications of this tender) on site comprehensive warranty from the date of receipt of the material as per terms & conditions specified in the tender document, which is available on CPP Portal http://eprocure.gov.in/eprocure/app

## TECHNICAL SPECIFICATION:

**Broad General Technical Requirements (Vendor to provide specific confirmation as part of compliance):**

| S.No. | Desired Parameters |
|---|---|
| 1. | Equipment being tendered is intended for primary use in system, which will characterize DC parametric response acquired through dedicated probe station. The integrated DC characterization system, Flicker Noise system along with DC Probe station will offer a guided wizard customizable for sure connections and correct setup. |
| 2. | Only vendors with necessary experience and competence to supply, integrate and install such functional system with all its hardware and software components will be selected as eligible bidders. |
| 3. | Vendor to deliver total solution to meet the test needs for the intended research and development. Vendors may be asked to provide necessary evidence to establish their experience & expertise and it is at institute's discretion to accept/reject the same. |
| 4. | System should be unified measurement platform equipped for wafer level, chip or SOC device characterization supplied with all specified accessories, probes, connectors, software, calibration fixtures such that the setup is self-sustaining and able to provide DC parametric analysis, IV and CV curves & upgradable in future to test for semiconductor devices such as transistors, amplifiers, filters, other linear components to meet intended needs of the department in integrated and standalone modes. |
| 5. | Wherever called for within the specifications, the offered equipment must be upgradable to higher performance thresholds as defined. |
| 6. | Software supplied should be capable of functioning on equipment |

## (A)
## (B) TECHNICAL SPECIFICATION: DC PROBE STATION

| S.No. | Parameters | Desired Specifications |
|---|---|---|

| | | |
|---|---|---|
| **1.** | **Wafer Prober** | • Wafer size capability: Shards or wafers 50 mm (2 in.) through 200 mm (8 in.) |
| | | • Motion Control: Manual controls (X-Y direct rotary knobs) |
| **2.** | **Chuck XY stage** | • Travel: 200mm × 200mm or more |
| | | • Resolution: 6 mm / turn |
| | | |
| | **Chuck Z stage** | Travel: Fixed Z mount |
| | | |
| | **Theta stage** | • Travel: ± 6° |
| | | • Resolution: 1° / turn |
| | | |
| | **Chuck** | • Temperature range : -50°C to 250°C or wider range |
| | | • Transition time – Heating (-60°C to 25°C): 7 min (typical) |
| | | • Transition time – Heating (25°C to 300°C) : 29 min (typical) |
| | | • Transition time – Cooling (300°C to 25°C): 17 min (typical) |
| | | • Transition time – Cooling (25°C to -60°C) : 17 min (typical) |
| | | • Temperature resolution : 0.15°C |
| | | |
| **3.** | **Platen** | • Material : Steel for magnetic positioners |
| | | • Lift range : ≥5.5 mm |
| | | • Repeatability : ≤ 3.5 µm |
| | | • Platen to chuck height : 13 ± 0.8 mm |
| **4.** | **Micro-positioners, cables, tips and connectors** | |
| | Quantity | Four numbers |
| | Feature resolution | ≤2.5 µm |
| | Travel | Travel in X, Y, Z axis : ≥ 11.5 mm |
| | Probe mounts and holders | 04 nos. fully shielded dual triaxial up to probe tip and 2 nos. needle mount, jack lock includes SSMC (M) connectors |
| | DC cables | 10 nos. 60cm Low Noise triaxial large to Small Connector, 04 nos. Coaxial cables with BNC connectors, 02 nos. 2m BNC TO SSMC cables |
| | Low leakage DC Probe tips | 04 boxes of 10 tips, 10µm diameter blade-type |
| | Tungsten DC Probe tips | 01 box of 25 tips, 12µm radius (straight) |
| | Base | Magnetic |
| | Application | IV / CV probing for interfacing with test instruments |
| | Connectors | 04 nos. Triax-to-BNC (Guard Shorted) adapter, 2 nos. Triax tee single male-dual female adapter, 2 nos. BNC TEE F-M-F adapter, 2 nos. TRIAX(M)/BNC(F) adapter |
| | Calibration substrate for CV measurement | 01 nos. 8 GS and 8 SG cal sites, for pitch from 250um to 1250um |
| **5.** | **Light shielding** | |
| | Wafer access | Front access door with rollout stage for easy wafer loading |
| | Probe compatibility | Standard Micro Chamber top hat compatible to allow access for up to eight probes |
| | Light attenuation | ≥ 110 dB |

| | | |
|---|---|---|
| **6.** | **Micro chamber** | |
| | EMI Shielding | ≥ 19 dB 0.5-3 GHz, ≥ 28 dB 3-20 GHz (typical) |
| | Spectral noise floor* | ≤ -180 dBVrms/rtHz (≤ 1 MHz) Thermal chuck |
| | System AC Noise | ≤ 6 mVp-p (≤ 1 GHz) Thermal chuck |
| | | |
| **7.** | **System electrical performance** | |
| | Probe leakage * Thermal controller OFF | ≤ 1.5 fA |
| | Chuck leakage * Thermal controller OFF | ≤ 2.5 fA |
| | Residual capacitance | ≤ 3.5 pF |
| | Capacitance variation ** | ≤ 4 fF |
| | Settling time *** All temperatures @ 10 V | ≤ 60 fA @ 50 ms (typical) |
| **8.** | **Microscope and Video Camera** | |
| | Type | High magnification colour CCD / CMOS digital microscope system |
| | Field of view | 2.5 x 1.75mm (Max), 0.1 x 0.05mm (Min) |
| | Optical paths | More than 1 |
| | Z drive resolution | 0.25um |
| | Zoom range | 0.5 – 5.0 or wider |
| | Video frame rates (1024 x 768) | 40fps |
| **9.** | **Vibration isolation** | The prober should have built-in vibration isolation or be equipped with an additional vibration isolation table. |
| | Vertical and horizontal natural frequency | Typical performance better than 0dB at 6Hz, with -5 dB per octave roll-off to 48Hz and >-20 dB attenuation above 48Hz (with a 8” probe station or equivalent load) |
| **10.** | **Vacuum pump** | **Low capacity pump for vacuum chuck** |
| | Features | Oil-less design, noise level less than 45dB(A/1m) |
| | | Rated for light use (60 minute duty cycle) |

## (B) TECHNICAL SPECIFICATIONS: SEMICONDUCTOR PARAMETRIC ANALYZER

| | | |
|---|---|---|
| General: Semiconductor Device Analyzer should be upgradable and support up to 9 slot modules. This should support IV, CV, pulsed-IV measurements and be able to work with industry standard device modeling and parameter extraction softwares. (quote price for mainframe and software separately) | | |
| 1. | Medium Power SMU Range & Resolution<br>(quote price per module separately) | • Maximum voltage range and resolution: 100 V with measure resolution of 100uV with at least 20mA of current at 100V<br>• Maximum current range and resolution: 100mA with measure resolution of 100nA<br>• Minimum current range and resolution: 1nA with measure resolution of 10fA |

| | | |
|---|---|---|
| 2. | High sensitivity SMU (quote price per module separately) | • Maximum voltage range and resolution: 100 V with measure resolution of 100uV with at least 20mA of current at 100V<br>• Maximum current range and resolution: 100mA with measure resolution of 100nA<br>• Minimum current range and resolution: 10pA with measure resolution of 1fA<br>• Pulse width range for pulsed measurement: 500us to 2 s<br>• Maximum Guard Capacitance :<1000pF |
| 3. | High current sink (Maximum sink current and Output Voltage)<br>(quote pricing per module separately) | Above 4 A, 0V ±100µV |
| 4. | IV Sweep Mode | Single & double Staircase sweep, Pulsed sweep, staircase sweep with pulsed bias, IV sampling, CV sweep, C-t Sweep, C-f Sweep, List sweep, Linear interval, log interval, stop condition, bias hold and negative hold time. |
| 5. | IV Sampling Capability | 3ms and 150µs in Fast sampling, linear and log sampling |
| 6. | QSCV Measurement | Quasi Static CV measurement with leak compensation. |
| 7. | CV measurement function (quote pricing per module separately) | Cp-G, Cp-D, Cp-Q, Cp-Rp, Cs-Rs, Cs-D, Cs-Q, Lp-G, Lp-D, Lp-Q, Lp-Rp, Ls-Rs, Ls-D, Ls-Q, R-X, G-B, Z-θ, Y-θ |
| 8. | CV Measurement Test Signal Frequency | • 1kHz to 5MHz with 5mHz resolution<br>• 10mV to 250mV or wider with 1mVrms resolution , DC bias at least up to + 25V, switching capability between IV and CV measurement automatically |
| 9. | Capacitance measurement accuracy at the instrument port at 30mVrms test signal level | • 1nF @1kHz <±0.25 %<br>• 100pF @ 1kHz <±1 %<br>• 1nF @10kHz <±0.2 %<br>• 100pF @ 10kHz <±0.5 % |
| 10. | Instrument should have the module with the capability to do non-volatile memory testing<br>(quote pricing per module separately) | Pulse capability •No. of channels: 2 per module ,Modes: pulse, constant, and free-run<br>•Output voltage (Vout) 50 Ω load –20 V to +20 V or wider, Open load –40 V to +40 V or wider<br>The unit should be able to measure the impedance of DUT and adjust the output voltage according to the DUT impedance.<br>•Pulse period range: 50 ns to 10 s or wider<br>•Pulse width programmable range: 15 ns to (period – 15 ns)<br>•Voltage monitor minimum sampling period (also for Pulsed IV): 10us<br>•Programmable parameters: Pulse width, period, Transition time.<br>•Complex waveform generation using arbitrary linear waveform generation should be possible<br>•Peak short circuit current: 750mA or more<br>•Output Connector: SMA |
| 11. | Trigger | Input: External trigger input starts a sweep or sampling Input Level: TTL level, negative or positive edge trigger |

|  |  |  |
|---|---|---|
| 12. | Interfaces | GPIB, interlock, USB (USB 2.0, front 2,rear 2), LAN (100BASE-TX/10BASE-T), trigger in/out, digital I/O, GPIB to USB adapter, required triax and other SMA-triax cables |
| 13. | Offline software | Offline Software for making setups and data analysis , The software/firmware should be capable to control the instrument from external PC |
| 14. | Application Libraries | • Application libraries for testing CMOS, FET BJTs, Diode, readymade setups : Should at least include<br>• Id-Vg, Id-Vd, capacitance, QSCV for CMOS<br>• Ic-Vc, diode, Gummel plot, breakdown, hfe, capacitance for BJT<br>• Reliability tests like NBTI/PBTI |
| 15. | Operating System | Windows/Linux Operating System, Built in Memory should be available |
| 16. | User Interface Options | • Touch panel, knob, soft keys, USB keyboard & mouse<br>• Test Fixture must be provided for testing the packaged devices: for measuring packaged devices with at least: 28 DIP socket module, Blank PTFE board and cables required for connection |
| 17. | Device modeling measurement and parameter extraction<br>(quote pricing per license separately) | • Five perpetual license of DC and RF semiconductor device modeling extraction software for accurate compact models used in high speed/digital, analog and power RF applications.<br>• The quoted advanced customizable modeling software should include measurement, simulation, optimization and statistical analysis tools.<br>• The software must have user's in semiconductor foundries and usage for modeling silicon CMOS, Bipolar, compound gallium arsenide (GaAs), gallium nitride (GaN) and other device technologies of interest. |
| 18. | Device Modeling software, Instruments & Prober support | It should support Parametric and Vector Network Analyzers, LCR Meters, Pulse Generators & must be able to control standard Prober system, High-performance PCI - GPIB interface card |
| 19. | Future Upgradable | • Upgradable for pulsed IV Measurement & for High Power devices.<br>• High current device measurement upto 1500A<br>• High Voltage device measurement upto 10000V |
| 20. | Rack cabinet | Appropriate racks must be included |

## (C) TECHNICAL SPECIFICATIONS: FLICKER NOISE MEASUREMENT SYSTEM

| **S.No.** | **Desired Specifications** |
|---|---|
| **1.** | Test system for characterization of Flicker Noise, Low frequency noise & RTN on component, devices, IC's both packaged & at wafer level |
| **2.** | Device type supported BJT's, FET's, diodes, Resistors, IC's Op-Amp, Comparators etc. |
| **3.** | System should be supplied with Test fixture for discrete components /packaged devices supporting leads of 25 or more, DIP type, with SMA Connectors for Source/Emitter/cathode/resistor, Gate/Base & Substrate terminal. |

| | |
|---|---|
| **4.** | The system should be shipped with all Software and Hardware including amplifiers ready for carrying out noise characterization on wafer level using an in-built hardware digitizer A/D converter. |
| **5.** | The system should comply with established regulatory standards and directives such as EMC IEC/EN61326-1, Safety IEC/EN61010-1, & EU ROHS |
| **6.** | System should be able to control parametric analyzer and probers automatically through provided User Interface. |

## (D) Measurement Requirements

| **S.No.** | **Parameters** | **Desired Specifications** |
|---|---|---|
| 1. | Number of supported device terminals as standard | 04 |
| 2. | Corner frequency of Ultra Low Frequency LNA in Voltage amplifier | < 60 Hz |
| 3. | Voltage amplifier noise floor @ 10 kHz | <0.75 nV/sqrt(Hz) Or <-175dBV$^2$/Hz |
| 4. | Number of voltage amplifiers | More than 2 |
| 5. | Current amplifier corner frequency | < 260 Hz |
| 6. | Current amplifier noise floor @ 10 kHz | <1 pA/sqrt(Hz) |
| 7. | Number of current amplifiers | >1 |
| 8. | Maximum current | ≥0.05 A |
| 9. | Minimum current | <200pA |
| 10. | Maximum voltage | ≥180 V |
| 11. | Input resistance range | 0…100 MΩ |
| 12. | Output resistance range | 0…≥ 50 MΩ |
| 13. | Number of input / output resistance steps | ≥15 |

## (E) TECHNICAL SPECIFICATIONS: ELECTRONIC SWITCHING UNIT (Qty. 01)

| **S.No.** | **Parameters** | **Desired Specifications** |
|---|---|---|
| 1. | General | • The switching unit should provide exceptionally low-current leakage and Capacitance measurement compensation feature, it should have ability to support down to 20 fA measurements.<br>• It should have sufficient inputs to support up to 4-SMU, full-Kelvin configuration. It should have more than 12 inputs with each corresponding to a unique internal path, so all inputs can be used simultaneously. |

| | | |
|---|---|---|
| | | • Flexible use should be provided by a modular structure that supports multiple output configurations.<br>• It should support up to 30 MHz bandwidth for use with instruments such as pulse generators. Flexible operator control is provided by the supplemental LED display and front panel control via keypad or optional light pen.<br>• Switches DC current, DC voltage, capacitance and LCR meters<br>• Set and monitor connection status on front panel<br>• Configurated status display with LED matrix display<br>• Connection setup by light pen – Controls through GP-IB interface – Auto ground function – Self-test, relay function test – Relay cleaning (quote pricing for the entire noise system separately) |
| 2. | I-V port , AUX port | 8 triaxial Ports (with Guard) and 6 BNC inputs Ports (with Guard) or better |
| 3. | Output Channel | Triaxial Ports (with Guard), x12, x24, x36, and x48 Configurations Available or better |
| 4. | Number of Slots in mainframe | More than 3 |
| 5. | Channel Isolation | I-V port 10^13(ohm) or better, AUX port 1 x 10^9(ohm) or better |
| 6. | Offset Current (Supplemental) | 75 fA or better I-V port |
| 7. | IM Noise (RMS) (Supplemental) | 7.5fA I-V port |
| 8. | Additional C measurement Error (Supplemental) | < ± 2 % + 0.2 pF |
| 9. | Band width (at --3dB) | 30MHz |
| 10. | Settling Time (Supplemental) | 3.0 sec at 300 fA |

## System & Software Requirements

| **Software /User Interface:** |
|---|
| 1. System should be supplied with GUI environment, including the wafer map environment, data display & SQL data base. Software should provide ready to use DC and noise measurements routines for most standard devices including MOSFET, BJT, FET, and DIODE devices. It should support measurement routines in common languages enabling customer to write his own test routines as well. |
| 2. Measurement results DC, noise power spectral density (1/f noise) and noise in the time domain (RTN) should be plotted & device statistics over wafer. Provided software should supports mathematical methods for data analysis including statistical analysis and digital filtering. Result/displayed data should save to ASCII format or to SQL Database compatible with device modelling softwares. It should support export for raw data. |
| 3. System should support noise - data processing in time up to 15M sampling pts or more with Noise-Histogram of current & voltage with minimum time step of 3.5ns or better. |

| |
|---|
| 4. System should support multiple built-in biasing schemes for flicker noise characterization for FET, Diode, BJT, Resistors etc. Software should be able to select Rsource & Rload based on device types (FET,Diode, BJT etc.) |
| 5. Software platform must be industry proven used by major foundries worldwide |
| 6. The interface must display the state of measurement, important parameters, picked noise waveform, and PSD of noise. |
| 7. The data analysis function must contain common models of 1/f noise, random telegraph noise, thermal noise, high frequency noise and data fitting tools. |
| 8. In-built sine signal generator for gain characterization from 0.1 Hz to 10 MHz or better range. |
| 9. The frequency resolution of the signal generator must be better than 100 mHz for f>30 Hz and 1 mHz for f<=30 Hz. |
| 10. External control of measurement execution via GPIB or LAN |
| 11. All cables to Analyzer and local amplifiers/ units included |

## Optional Items

| S.No. | Parameters | Desired Specifications |
|---|---|---|
| 1. | General | • Option to mount optical fiber on probe positioners in order to illuminate sample and or collect reflected/emitted light, any required accessories should also be quoted. |

## Other Terms & Conditions:

| | | |
|---|---|---|
| **1.** | **Calibration Service** | 1. System should support Guided system calibration procedure & Self-Calibration option should be provided.<br>2. Vendor to quote for 3 years calibration of the system at customer site with external signal source |
| **2.** | **System/Tool Acceptance** | 1. All parameters (or a subset) stated below and according to tool & process specifications could be tested during start-up session and are mandatory for the final tool acceptance.<br>Acceptance test Method must be documented in the Vendor Statement of Work.<br>These methods may be applied to determine operation properties:<br>• Connection to test fixture (only if option was selected) and setup test on discrete device<br>• Connection to wafer prober<br>• Noise floor benchmarking at 10 KHz (open state vs. with connected prober)<br>• Manual single device Measurement of RTN and noise on reference wafers and benchmark with existing data<br>• Semi-Automated/manual measurement of RTN and noise on wafer prober station<br>• Reproducibility of abovementioned measurement after 24 hours |

| | | |
|---|---|---|
| **3.** | **Vendor Selection/Bid Evaluation Requirement/Criteria** | |
| | • Number of similar units installed in semiconductor industry worldwide | • *>50* |
| | • Number of similar units installed within India | • *At least 1* |
| | • Vendor to attach detailed published technical brochure /data sheet as supporting document. And website link to be provided for the same. | |
| **4.** | **Installation and Commissioning** | i) Installation, complete interfacing of the system with its subsystems, and commissioning is to be carried out by the vendor's factory-trained engineers, followed by a demonstration of the system's performance to the user's complete satisfaction.<br>ii) An estimated time schedule for installation, commissioning and training must be provided. |
| **5.** | **Training** | i) The manufacturer/supplier should provide at least seven days onsite training initially during installation<br>ii) The supplier or manufacturer should also provide dedicated five days advanced training subsequent to the above training installation.<br>iii) Regular follow up training every six months extended warranty on mutually convenient dates for and application to the laboratory personnel in the on and maintenance of the instruments. |
| **6.** | **Warranty** | System should be covered for comprehensive warranty for 3 years from the manufacturer **All parts including spares should be covered under the warranty and this fact should be clearly and explicitly specified in the tender document.**<br>The comprehensive Warranty should cover:<br>1. All parts including accessories, spares and labour on site<br>2. Free maintenance and service on site or at factory with no cost, and<br>3. Regular up-gradation of software |
| **7.** | **Power Supply** | Should meet Indian Power standards preferably nal converters |
| **8.** | **System Consumable Parts** | Basic frequently required spares should be ntire period of extended warranty. A list of these tached with the quotation. The standard scope of clude performance verification standards and of consumables for trouble free operation. |
| **9.** | **Support and Service:** | 1. The manufacturer and/or their Indian representative must have at least two qualified and factory trained service engineer in India to be able to attend to service at IIT Delhi within 48 hours on submitting a complaint. Training certificates from the manufacturer have to be provided with the tender. |

| | | |
|---|---|---|
| | | 2. For warranty period only factory trained and certified engineers are acceptable to attend the service.<br>3. The response time with an engineer on site must be less than 48 hours from the notification of the failure. The company must provide evidence that it can fulfil this requirement.<br>4. In case the parts are required to be imported for repairs, the same should be made available within 2 weeks from the date of reporting of the issue. Any extension in this time will need to be compensated by the manufacturer by extending the comprehensive warranty by the excess period taken (i.e. period beyond 2 weeks) in completing the repairs.<br>5. A 10% performance guarantee will need **ring** the period of extended warranty. |
| **10.** | **Bid Evaluation/Special Terms for Bidders** | • Bidders must provide point-by-point compliance to all tendered Technical Specifications, Technical Requirements and Special Terms. Where required, vendor must provide compliance, deviation if any and requisite justification to meet tender requirements in total. Without such details, bids may be summarily rejected at discretion of IIT Delhi.<br>• Bids complying with only part requirements of tendered specifications are liable to be rejected. Bidder is accountable for supply, integration, installation and support of all quoted parts including any third party parts not manufactured by them, akin to a turnkey bid. All necessary authorizations must be obtained from third party/part suppliers confirming support to the primary bidder to quote, honor OEM warranty and support during integration, warranty period and for life of the product.<br>• Vendors for main test equipment and probe stations must have their own technically equipped application engineer / engineering team to provide installation, training and after sales support.<br>• Primary vendor OEM should have well established repair and calibration facility for all supplied main equipment within India.<br>• At least 5 similar setup should be found in India. |

A complete set of tender documents* may be Download by prospective bidder free of cost from the website http://eprocure.gov.in/eprocure/app. Bidder has to make payment of requisite fees (i.e. Tender fees (if any) and EMD) online through RTGS/NEFT only.

## Terms & Conditions Details

| Sl. No. | Specification |
|---|---|
| 1. | **Due date**: The tender has to be submitted on-line before the due date. The offers received after the due date and time will not be considered. No manual bids will be considered. |
| 2. | **Preparation of Bids**: The offer/bid should be submitted in two bid systems (i.e.) Technical bid and financial bid. The technical bid should consist of all technical details along with commercial terms and conditions. Financial bid should indicate item wise price for the items mentioned in the technical bid in the given format i.e BoQ_XXXX.<br>The Technical bid and the financial bid should be submitted Online.<br>***Note: -Comparison of prices will be done ONLY on the bids submitted for the Main Equipment and anything asked as 'Optional' in the specs is not to be included for overall comparison.*** |
| 3. | **EMD (if applicable)**: The tenderer should submit an EMD amount through RTGS/NEFT. The Technical Bid without EMD would be considered as UNRESPONSIVE and will not be accepted. The EMD will be refunded without any interest to the unsuccessful bidders after the award of contract. Refer to Schedule (at page 1 of this document) for its actual place of submission. |
| 4. | **Refund of EMD**: The EMD will be returned to unsuccessful Tenderer only after the Tenders are finalized. In case of successful Tenderer, it will be retained till the successful and complete installation of the equipment. |
| 5. | **Opening of the tender**: The online bid will be opened by a committee duly constituted for this purpose. Online bids (complete in all respect) received along with EMD (if any) will be opened as mentioned at "Annexure: Schedule" in presence of bidders representative if available. Only one representative will be allowed to participate in the tender opening. Bid received without EMD (if present) will be rejected straight way. The technical bid will be opened online first and it will be examined by a technical committee (as per specification and requirement). The financial offer/bid will be opened only for the offer/bid which technically meets all requirements as per the specification, and will be opened in the presence of the vendor's representatives subsequently for further evaluation. The bidders if interested may participate on the tender opening Date and Time. The bidder should produce authorization letter from their company to participate in the tender opening. |
| 6. | **Acceptance/ Rejection of bids:** The Committee reserves the right to reject any or all offers without assigning any reason. |
| 7. | **Pre-qualification criteria:**<br>(i) Bidders should be the manufacturer / authorized dealer. Letter of Authorization from original equipment manufacturer (OEM) on the same and specific to the tender should be enclosed.<br>(ii) An undertaking from the OEM is required stating that they would facilitate the bidder on a regular basis with technology/product updates and extend support for the warranty as well. (Ref. Annexure-II)<br>(iii) OEM should be internationally reputed Branded Company.<br>(iv) Non-compliance of tender terms, non-submission of required documents, lack of clarity of the specifications, contradiction between bidder specification and supporting documents etc. may lead to rejection of the bid.<br>(v) In the tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.<br>(vi) If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product. |
| 8. | **Performance Security**: The supplier shall require to submit the performance security in the form of irrevocable bank guarantee issued by any Indian Nationalized Bank for an amount which is stated at page #1 of the tender document within 21 days from the date of receipt of the purchase order/LC and should be kept valid for a period of 60 days beyond the date of completion of warranty period. |
| 9. | **Force Majeure:** The Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure. |

| | |
|---|---|
| | • For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.<br>• If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event. |
| 10. | **Risk Purchase Clause**: In event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from the other source on the total risk of the supplier under risk purchase clause. |
| 11. | **Packing Instructions**: Each package will be marked on three sides with proper paint/indelible ink, the following:<br>i. Item Nomenclature<br>ii. Order/Contract No.<br>iii. Country of Origin of Goods<br>iv. Supplier’s Name and Address<br>v. Consignee details<br>vi. Packing list reference number |
| 12. | **Delivery and Documents:**<br>Delivery of the goods should be made within a maximum of 12 to 16 weeks *(for goods ready for shipment)* & Maximum *(To be filled by Purchaser)* weeks *(For special/ to be fabricated goods) from the date of the opening of LC*. Within 24 hours of shipment, the supplier shall notify the purchaser and the insurance company by cable/telex/fax/e mail the full details of the shipment including contract number, railway receipt number/ AAP etc. and date, description of goods, quantity, name of the consignee, invoice etc. The supplier shall mail the following documents to the purchaser with a copy to the insurance company:<br>1. 4 Copies of the Supplier invoice showing contract number, goods' description, quantity<br>2. unit price, total amount;<br>3. Insurance Certificate if applicable;<br>4. Manufacturer's/Supplier's warranty certificate;<br>5. Inspection Certificate issued by the nominated inspection agency, if any<br>6. Supplier’s factory inspection report; and<br>7. Certificate of Origin (if possible by the beneficiary);<br>8. Two copies of the packing list identifying the contents of each package.<br>9. The above documents should be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses. |
| 13. | **Delayed delivery:** If the delivery is not made within the due date for any reason, the Committee will have the right to impose penalty 1% per week and the maximum deduction is 10% of the contract value / price. |
| 14. | **Prices**: The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges. The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However the percentage of taxes & duties shall be clearly indicated.<br>The price should be quoted without custom duty and excise duty, since IIT Delhi is exempted from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand.<br>**In case of imports, the price should be quoted on FOB/FCA origin Airport Basis only.** Under special circumstances (eg. perishable chemicals), when the item is imported on CIF/CIP, please indicate CIF/CIP charges separately upto IIT Delhi indicating the mode of shipment. IIT Delhi will |

| | |
|---|---|
| | make necessary arrangements for the clearance of imported goods at the Airport/Seaport. Hence the price should not include the above charges. **At any circumstances, it is the responsibility of the foreign supplier to handover the material to our forwarder at the origin airport after completing all the inland clearing. No Ex- Works consignment will be entertained.**<br>"In case of **CIF/CIP** shipments, kindly provide the shipment information at least 2 days in advance before landing the shipment along with the documents i.e. invoice, packing list, forwarder Name, address, contact No. in India to save penalty/demurrage charges (imposed by Indian Customs) . Otherwise these charges will be recovered from the supplier/Indian Agent."<br>***Note: -Comparison of prices will be done ONLY on the bids submitted for the Main Equipment and anything asked as 'Optional' in the specs is not to be included for overall comparison.*** |
| 15. | **Notices:** For the purpose of all notices, the following shall be the address of the Purchaser and Supplier.<br>**Purchaser: Prof. Abhisek Dixit**<br>Department of Electrical Engineering<br>Indian Institute of Technology<br>Hauz Khas, New Delhi - 110016.<br><br>**Supplier:** (To be filled in by the supplier)<br>**(All supplier's should submit its supplies information as per Annexure-II).**<br>________________________________________<br>________________________________________ |
| 16. | **Progress of Supply**: Wherever applicable, supplier shall regularly intimate progress of supply, in writing, to the Purchaser as under:<br>1. Quantity offered for inspection and date;<br>2. Quantity accepted/rejected by inspecting agency and date;<br>3. Quantity dispatched/delivered to consignees and date;<br>4. Quantity where incidental services have been satisfactorily completed with date;<br>5. Quantity where rectification/repair/replacement effected/completed on receipt of any communication from consignee/Purchaser with date;<br>6. Date of completion of entire Contract including incidental services, if any; and<br>**7.** Date of receipt of entire payments under the Contract (In case of stage-wise inspection, details required may also be specified). |
| 17. | **Inspection and Tests:** Inspection and tests prior to shipment of Goods and at final acceptance are as follows:<br>• After the goods are manufactured and assembled, inspection and testing of the goods shall be carried out at the supplier's plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications attached to the purchase order. Manufacturer's test certificate with data sheet shall be issued to this effect and submitted along with the delivery documents. The purchaser shall be present at the supplier's premises during such inspection and testing if need is felt. The location where the inspection is required to be conducted should be clearly indicated. The supplier shall inform the purchaser about the site preparation, if any, needed for installation of the goods at the purchaser's site at the time of submission of order acceptance.<br>• The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation and ascertaining conformity with the ordered specifications and quality. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified. |

| | |
|---|---|
| | - In the event of the ordered item failing to pass the acceptance test, a period not exceeding one weeks will be given to rectify the defects and clear the acceptance test, failing which the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser.<br>- Successful conduct and conclusion of the acceptance test for the installed goods and equipment shall also be the responsibility and at the cost of the Supplier. |
| 18. | **Resolution of Disputes**: The dispute resolution mechanism to be applied pursuant shall be as follows:<br>- In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to the Director, Indian Institute of Technology (IIT) Delhi and if he is unable or unwilling to act, to the sole arbitration of some other person appointed by him willing to act as such Arbitrator. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to this order.<br>- In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration in accordance with provision of sub-clause (a) above. But if this is not acceptable to the supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules.<br>- The venue of the arbitration shall be the place from where the order is issued. |
| 19. | **Applicable Law:** The place of jurisdiction would be New Delhi (Delhi) INDIA. |
| 20. | **Right to Use Defective Goods**<br>If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the goods proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser's operation. |
| 21. | **Supplier Integrity**<br>The Supplier is responsible for and obliged to conduct all contracted activities in accordance with the Contract using state of the art methods and economic principles and exercising all means available to achieve the performance specified in the contract. |
| 22. | **Training**<br>The Supplier is required to provide training to the designated Purchaser's technical and end user personnel to enable them to effectively operate the total equipment. |
| 23. | **Installation & Demonstration**<br>The supplier is required to done the installation and demonstration of the equipment within one month of the arrival of materials at the IITD site of installation, otherwise the penalty clause will be the same as per the supply of materials.<br>In case of any mishappening/damage to equipment and supplies during the carriage of supplies from the origin of equipment to the installation site, the supplier has to replace it with new equipment/supplies immediately at his own risk. Supplier will settle his claim with the insurance company as per his convenience. IITD will not be liable to any type of losses in any form. |
| 24. | **Insurance:** For delivery of goods at the purchaser's premises, the insurance shall be obtained by the supplier in an amount equal to 110% of the value of the goods from "warehouse to warehouse" (final destinations) on "All Risks" basis including War Risks and Strikes. The insurance shall be valid for a period of not less than 3 months after installation and commissioning. **In case of orders placed on FOB/FCA basis, the purchaser shall arrange Insurance. If orders placed on CIF/CIP basis, the insurance should be up to IIT Delhi.** |
| 25. | **Incidental services:** The incidental services also include:<br>- Furnishing of 01 set of detailed operations & maintenance manual.<br>- Arranging the shifting/moving of the item to their location of final installation within IITD premises at the cost of Supplier through their Indian representatives. |

26. **Warranty**:

(i) Warranty period shall be (as stated at page #2 of this tender) from date of installation of Goods at the IITD site of installation. The Supplier shall, in addition, comply with the performance and/or consumption guarantees specified under the contract. If for reasons attributable to the Supplier, these guarantees are not attained in whole or in part, the Supplier shall at its discretion make such changes, modifications, and/or additions to the Goods or any part thereof as may be necessary in order to attain the contractual guarantees specified in the Contract at its own cost and expense and to carry out further performance tests. The warranty should be comprehensive on site.

(ii) The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall immediately within in 02 days arrange to repair or replace the defective goods or parts thereof free of cost at the ultimate destination. The Supplier shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie on the Purchaser for the replaced parts/goods thereafter. The period for correction of defects in the warranty period is 02 days. If the supplier having been notified fails to remedy the defects within 02 days, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expenses and without prejudice to any other rights, which the purchaser may have against the supplier under the contract.

(iii) The warranty period should be clearly mentioned. The maintenance charges (AMC) under different schemes after the expiry of the warranty should also be mentioned. The comprehensive warranty will commence from the date of the satisfactory installation/commissioning of the equipment against the defect of any manufacturing, workmanship and poor quality of the components.

(iv) After the warranty period is over, Annual Maintenance Contract (AMC)/Comprehensive Maintenance Contract (CMC) up to next two years should be started. The AMC/CMC charges will not be included in computing the total cost of the equipment.

27. **Governing Language**

The contract shall be written in English language. English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the same language.

28. **Applicable Law**

The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to place of jurisdiction.

29. **Notices**

- Any notice given by one party to the other pursuant to this contract/order shall be sent to the other party in writing or by cable, telex, FAX or e mail and confirmed in writing to the other party's address.
- A notice shall be effective when delivered or on the notice's effective date, whichever is later.

30. **Taxes**

Suppliers shall be entirely responsible for all taxes, duties, license fees, octroi, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser. However, GST etc, in respect of the transaction between the Purchaser and the Supplier shall be payable extra, if so stipulated in the order.

For research purpose(s) **ONLY**, 5% GST will be applicable with concessional GST Certificate.

31. **Duties**

IIT Delhi is exempted from paying custom duty under notification No.51/96 (partially or full) and necessary "Custom Duty Exemption Certificate" can be issued after providing following information and Custom Duty Exemption Certificate will be issued to the shipment in the name of the Institute, (no certificate will be issued to third party): The procured product should be used for teaching, scientific and research work only.

a) Shipping details i.e. Master Airway Bill No. and House Airway No. (if exists)

b) Forwarder details i.e. Name, Contact No., etc.

| | |
|---|---|
| | IIT Delhi is partially exempted from paying GST and necessary GST Exemption Certificate will be provided for which following information are required.<br>b) Quotation with details of Basic Price, Rate, Tax & Amount on which ED is applicable<br>c) Supply Order Copy<br>d) Proforma-Invoice Copy. |
| 32. | **Agency Commission**: Agency commission if any will be paid to the Indian agent in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in Tender even in case of Nil commission. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent. |
| 33. | **Payment**:<br>(i) For imported items Payment will be made through irrevocable Letter of Credit (LC) Cash Against Documents (CAD)/Against delivery/after satisfactory installation by T.T. Letter of Credit (LC) will be established in favour of foreign Supplier after the submission of performance security. The letter of credit (LC) will be established on the exchange rates as applicable on the date of establishment. For Imports, LC will be opened for 100% FOB/CIF value. 80% of the LC amount shall be released on presentation of complete and clear shipping documents and 20% of the LC amount shall be released after the installation and demonstration of the equipment at the INST site of installation in faultless working condition for period of 60 days from the date of the satisfactory installation and subject to the production of unconditional performance bank guarantee as specified in Clause 8 of tender terms and conditions.<br>(ii) For Indigenous supplies, 100% payment shall be made by the Purchaser against delivery, inspection, successful installation, commissioning and acceptance of the equipment at IITD in good condition and to the entire satisfaction of the Purchaser and on production of unconditional performance bank guarantee as specified in Clause 9 of tender terms and conditions.<br>(iii) Indian Agency commission (IAC), if any shall be paid after satisfactory installation & commissioning of the goods at the destination at the exchange rate prevailing on the date of negotiation of LC documents, subject to DGS&D registration for restricted items.<br>(iv) All the bank charges within India will be borne by the Institute and outside India will be borne by the Supplier. |
| 34. | **User list:** Brochure detailing technical specifications and performance, list of industrial and educational establishments where the items enquired have been supplied must be provided. (Ref. Annexure-III) |
| 35. | **Manuals and Drawings**<br>(i) Before the goods and equipment are taken over by the Purchaser, the Supplier shall supply operation and maintenance manuals. These shall be in such details as will enable the Purchaser to operate, maintain, adjust and repair all parts of the works as stated in the specifications.<br>(ii) The Manuals shall be in the ruling language (English) in such form and numbers as stated in the contract.<br>(iii) Unless and otherwise agreed, the goods equipment shall not be considered to be completed for the purposes of taking over until such manuals and drawing have been supplied to the Purchaser. |
| 36. | **Application Specialist**: The Tenderer should mention in the Techno-Commercial bid the availability and names of Application Specialist and Service Engineers in the nearest regional office. (Ref. to Annexure-III) |
| 37. | **Site Preparation**: The supplier shall inform to the Institute about the site preparation, if any, needed for the installation of equipment, immediately after the receipt of the purchase order. The supplier must provide complete details regarding space and all the other infrastructural requirements needed for the equipment, which the Institute should arrange before the arrival of the equipment to ensure its timely installation and smooth operation thereafter.<br>The supplier shall visit the Institute and see the site where the equipment is to be installed and may offer his advice and render assistance to the Institute in the preparation of the site and other pre-installation requirements. |

| | |
|---|---|
| 38. | **Spare Parts**<br>The Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:<br>ii. Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract; and<br>iii. In the event of termination of production of the spare parts:<br>iv. Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and<br>v. Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested.<br>Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods, such as gaskets, plugs, washers, belts etc. Other spare parts and components shall be supplied as promptly as possible but in any case within six months of placement of order. |
| 39. | **Defective Equipment**: If any of the equipment supplied by the Tenderer is found to be substandard, refurbished, un-merchantable or not in accordance with the description/specification or otherwise faulty, the committee will have the right to reject the equipment or its part. The prices of such equipment shall be refunded by the Tenderer with 18% interest if such payments for such equipment have already been made. All damaged or unapproved goods shall be returned at suppliers cost and risk and the incidental expenses incurred thereon shall be recovered from the supplier. Defective part in equipment, if found before installation and/or during warranty period, shall be replaced within 45 days on receipt of the intimation from this office at the cost and risk of supplier including all other charges. In case supplier fails to replace above item as per above terms & conditions, IIT Delhi may consider "Banning" the supplier. |
| 40. | **Termination for Default**<br>The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part:<br>i. If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the order, or within any extension thereof granted by the Purchaser; or<br>ii If the Supplier fails to perform any other obligation(s) under the Contract.<br>iii If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.<br>● For the purpose of this Clause:<br>i. "**Corrupt practice**" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.<br>ii. "**Fraudulent practice**" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;'"<br>● In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the Contract to the extent not terminated. |
| 41. | **Shifting**: After 1-2 years once our new Academic Block will be ready, the supplier has to shift and reinstall the instrument free of cost (if required). |
| 42. | **Downtime:** During the warranty period not more than 5% downtime will be permissible. For every day exceeding permissible downtime, penalty of 1/365 of the 5% FOB value will be imposed. Downtime will be counted from the date and time of the filing of complaint with in the business hours. |

| | |
|---|---|
| 43. | **Training of Personnel:** The supplier shall be required to undertake to provide the technical training to the personnel involved in the use of the equipment at the Institute premises, immediately after completing the installation of the equipment for a minimum period of one week at the supplier's cost. |
| 44. | **Disputes and Jurisdiction**: Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within New Delhi. |
| 45. | **Compliancy certificate**: This certificate must be provided indicating conformity to the technical specifications. (Annexure-I) |

## COMPLIANCE SHEET

### TECHNICAL SPECIFICATION

| S.No. | Desired Parameters | Compliance (Yes/No) with detailed specifications |
|---|---|---|
| **1.** | Equipment being tendered is intended for primary use in system, which will characterize DC parametric response acquired through dedicated probe station. The integrated DC characterization system, Flicker Noise system along with DC Probe station will offer a guided wizard customizable for sure connections and correct setup. | |
| **2.** | Only vendors with necessary experience and competence to supply, integrate and install such functional system with all its hardware and software components will be selected as eligible bidders. | |
| **3.** | Vendor to deliver total solution to meet the test needs for the intended research and development. Vendors may be asked to provide necessary evidence to establish their experience & expertise and it is at institute's discretion to accept/reject the same. | |
| **4.** | System should be unified measurement platform equipped for wafer level, chip or SOC device characterization supplied with all specified accessories, probes, connectors, software, calibration fixtures such that the setup is self-sustaining and able to provide DC parametric analysis, IV and CV curves & upgradable in future to test for semiconductor devices such as transistors, amplifiers, filters, other linear components to meet intended needs of the department in integrated and standalone modes. | |
| **5.** | Wherever called for within the specifications, the offered equipment must be upgradable to higher performance thresholds as defined. | |
| **6.** | Software supplied should be capable of functioning on equipment | |

## (C) TECHNICAL SPECIFICATION : DC PROBE STATION

| S.No. | Parameters | Desired Specifications | Compliance (Yes/No) with detailed specifications |
|---|---|---|---|
| **1.** | **Wafer Prober** | • Wafer size capability: Shards or wafers 50 mm (2 in.) through 200 mm (8 in.) | |
| | | • Motion Control: Manual controls (X-Y direct rotary knobs) | |

| | | | |
|---|---|---|---|
| **2.** | **Chuck XY stage** | - Travel: 200mm × 200mm or more | |
| | | - Resolution: 6 mm / turn | |
| | | | |
| | **Chuck Z stage** | Travel: Fixed Z mount | |
| | | | |
| | **Theta stage** | - Travel: ± 6° | |
| | | - Resolution: 1° / turn | |
| | | | |
| | **Chuck** | - Temperature range : -50°C to 250°C or wider range | |
| | | - Transition time – Heating (-60°C to 25°C): 7 min (typical) | |
| | | - Transition time – Heating (25°C to 300°C) : 29 min (typical) | |
| | | - Transition time – Cooling (300°C to 25°C): 17 min (typical) | |
| | | - Transition time – Cooling (25°C to -60°C) : 17 min (typical) | |
| | | - Temperature resolution : 0.15°C | |
| | | | |
| **3.** | **Platen** | - Material : Steel for magnetic positioners | |
| | | - Lift range : ≥5.5 mm | |
| | | - Repeatability : ≤ 3.5 μm | |
| | | - Platen to chuck height : 13 ± 0.8 mm | |
| **4.** | **Micro-positioners, cables, tips and connectors** | | |
| | Quantity | Four numbers | |
| | Feature resolution | ≤2.5 μm | |
| | Travel | Travel in X, Y, Z axis : ≥ 11.5 mm | |
| | Probe mounts and holders | 04 nos. fully shielded dual triaxial up to probe tip and 2 nos. needle mount, jack lock includes SSMC (M) connectors | |
| | DC cables | 10 nos. 60cm Low Noise triaxial large to Small Connector, 04 nos. Coaxial cables with BNC connectors, 02 nos. 2m BNC TO SSMC cables | |
| | Low leakage DC Probe tips | 04 boxes of 10 tips, 10µm diameter blade-type | |
| | Tungsten DC Probe tips | 01 box of 25 tips, 12µm radius (straight) | |
| | Base | Magnetic | |
| | Application | IV / CV probing for interfacing with test instruments | |
| | Connectors | 04 nos. Triax-to-BNC (Guard Shorted) adapter, 2 nos. Triax tee single male-dual female adapter, 2 nos. BNC TEE F-M-F adapter, 2 nos. TRIAX(M)/BNC(F) adapter | |

| | | | |
|---|---|---|---|
| | Calibration substrate for CV measurement | 01 nos. 8 GS and 8 SG cal sites, for pitch from 250um to 1250um | |
| **5.** | **Light shielding** | | |
| | Wafer access | Front access door with rollout stage for easy wafer loading | |
| | Probe compatibility | Standard Micro Chamber top hat compatible to allow access for up to eight probes | |
| | Light attenuation | ≥ 110 dB | |
| **6.** | **Micro chamber** | | |
| | EMI Shielding | ≥ 19 dB 0.5-3 GHz, ≥ 28 dB 3-20 GHz (typical) | |
| | Spectral noise floor* | ≤ -180 dBVrms/rtHz (≤ 1 MHz) Thermal chuck | |
| | System AC Noise | ≤ 6 mVp-p (≤ 1 GHz) Thermal chuck | |
| | | | |
| **7.** | **System electrical performance** | | |
| | Probe leakage * Thermal controller OFF | ≤ 1.5 fA | |
| | Chuck leakage * Thermal controller OFF | ≤ 2.5 fA | |
| | Residual capacitance | ≤ 3.5 pF | |
| | Capacitance variation ** | ≤ 4 fF | |
| | Settling time *** All temperatures @ 10 V | ≤ 60 fA @ 50 ms (typical) | |
| **8.** | **Microscope and Video Camera** | | |
| | Type | High magnification colour CCD / CMOS digital microscope system | |
| | Field of view | 2.5 x 1.75mm (Max), 0.1 x 0.05mm (Min) | |
| | Optical paths | More than 1 | |
| | Z drive resolution | 0.25um | |
| | Zoom range | 0.5 – 5.0 or wider | |
| | Video frame rates (1024 x 768) | 40fps | |
| **9.** | **Vibration isolation** | The prober should have built-in vibration isolation or be equipped with an additional vibration isolation table. | |
| | Vertical and horizontal | Typical performance better than 0dB at 6Hz, with -5 dB per octave roll-off to 48Hz and >-20 dB | |

| | | | |
|---|---|---|---|
| | natural frequency | attenuation above 48Hz (with a 8” probe station or equivalent load) | |
| **10.** | **Vacuum pump** | **Low capacity pump for vacuum chuck** | |
| | Features | Oil-less design, noise level less than 45dB(A/1m) | |
| | | Rated for light use (60 minute duty cycle) | |

## (B) TECHNICAL SPECIFICATIONS: SEMICONDUCTOR PARAMETRIC ANALYZER

| General: Semiconductor Device Analyzer should be upgradable and support up to 9 slot modules. This should support IV, CV, pulsed-IV measurements and be able to work with industry standard device modeling and parameter extraction softwares. (quote price for mainframe and software separately) | | | **Compliance (Yes/No) with detailed specifications** |
|---|---|---|---|
| 1. | Medium Power SMU Range & Resolution (quote price per module separately) | • Maximum voltage range and resolution: 100 V with measure resolution of 100uV with at least 20mA of current at 100V<br>• Maximum current range and resolution: 100mA with measure resolution of 100nA<br>• Minimum current range and resolution: 1nA with measure resolution of 10fA | |
| 2. | High sensitivity SMU (quote price per module separately) | • Maximum voltage range and resolution: 100 V with measure resolution of 100uV with at least 20mA of current at 100V<br>• Maximum current range and resolution: 100mA with measure resolution of 100nA<br>• Minimum current range and resolution: 10pA with measure resolution of 1fA<br>• Pulse width range for pulsed measurement: 500us to 2 s<br>• Maximum Guard Capacitance :<1000pF | |
| 3. | High current sink (Maximum sink current and Output Voltage) (quote pricing per module separately) | Above 4 A, 0V ±100µV | |

|  |  |  |  |
|---|---|---|---|
| 4. | IV Sweep Mode | Single & double Staircase sweep, Pulsed sweep, staircase sweep with pulsed bias, IV sampling, CV sweep, C-t Sweep, C-f Sweep, List sweep, Linear interval, log interval, stop condition, bias hold and negative hold time. |  |
| 5. | IV Sampling Capability | 3ms and 150µs in Fast sampling, linear and log sampling |  |
| 6. | QSCV Measurement | Quasi Static CV measurement with leak compensation. |  |
| 7. | CV measurement function (quote pricing per module separately) | Cp-G, Cp-D, Cp-Q, Cp-Rp, Cs-Rs, Cs-D, Cs-Q, Lp-G, Lp-D, Lp-Q, Lp-Rp, Ls-Rs, Ls-D, Ls-Q, R-X, G-B, Z-θ, Y-θ |  |
| 8. | CV Measurement Test Signal Frequency | • 1kHz to 5MHz with 5mHz resolution<br>• 10mV to 250mV or wider with 1mVrms resolution , DC bias at least up to + 25V, switching capability between IV and CV measurement automatically |  |
| 9. | Capacitance measurement accuracy at the instrument port at 30mVrms test signal level | • 1nF @1kHz <±0.25 %<br>• 100pF @ 1kHz <±1 %<br>• 1nF @10kHz <±0.2 %<br>• 100pF @ 10kHz <±0.5 % |  |
| 10. | Instrument should have the module with the capability to do non-volatile memory testing (quote pricing per module separately) | Pulse capability •No. of channels: 2 per module ,Modes: pulse, constant, and free-run<br>•Output voltage (Vout) 50 Ω load –20 V to +20 V or wider, Open load –40 V to +40 V or wider<br>The unit should be able to measure the impedance of DUT and adjust the output voltage according to the DUT impedance.<br>•Pulse period range: 50 ns to 10 s or wider<br>•Pulse width programmable range: 15 ns to (period – 15 ns)<br>•Voltage monitor minimum sampling period (also for Pulsed IV): 10us |  |

| | | | |
|---|---|---|---|
| | | •Programmable parameters: Pulse width, period, Transition time.<br>•Complex waveform generation using arbitrary linear waveform generation should be possible<br>•Peak short circuit current: 750mA or more<br>•Output Connector: SMA | |
| 11. | Trigger | Input: External trigger input starts a sweep or sampling Input Level: TTL level, negative or positive edge trigger | |
| 12. | Interfaces | GPIB, interlock, USB (USB 2.0, front 2,rear 2), LAN (100BASE-TX/10BASE-T), trigger in/out, digital I/O, GPIB to USB adapter, required triax and other SMA-triax cables | |
| 13. | Offline software | Offline Software for making setups and data analysis , The software/firmware should be capable to control the instrument from external PC | |
| 14. | Application Libraries | • Application libraries for testing CMOS, FET BJTs, Diode, readymade setups : Should at least include<br>• Id-Vg, Id-Vd, capacitance, QSCV for CMOS<br>• Ic-Vc, diode, Gummel plot, breakdown, hfe, capacitance for BJT<br>• Reliability tests like NBTI/PBTI | |
| 15. | Operating System | Windows/Linux Operating System, Built in Memory should be available | |
| 16. | User Interface Options | • Touch panel, knob, soft keys, USB keyboard & mouse<br>• Test Fixture must be provided for testing the packaged devices: for measuring packaged devices with at least: 28 DIP socket module, Blank PTFE board and cables required for connection | |

|  |  |  |  |
|---|---|---|---|
| 17. | Device modeling measurement and parameter extraction (quote pricing per license separately) | • Five perpetual license of DC and RF semiconductor device modeling extraction software for accurate compact models used in high speed/digital, analog and power RF applications.<br>• The quoted advanced customizable modeling software should include measurement, simulation, optimization and statistical analysis tools.<br>• The software must have user's in semiconductor foundries and usage for modeling silicon CMOS, Bipolar, compound gallium arsenide (GaAs), gallium nitride (GaN) and other device technologies of interest. |  |
| 18. | Device Modeling software, Instruments & Prober support | It should support Parametric and Vector Network Analyzers, LCR Meters, Pulse Generators & must be able to control standard Prober system, High-performance PCI -GPIB interface card |  |
| 19. | Future Upgradable | • Upgradable for pulsed IV Measurement & for High Power devices.<br>• High current device measurement upto 1500A<br>• High Voltage device measurement upto 10000V |  |
| 20. | Rack cabinet | Appropriate racks must be included |  |

## (C) TECHNICAL SPECIFICATIONS: FLICKER NOISE MEASUREMENT SYSTEM

| **S.No.** | **Desired Specifications** | **Compliance (Yes/No) with detailed specifications** |
|---|---|---|
| **1.** | Test system for characterization of Flicker Noise, Low frequency noise & RTN on |  |

| | | |
|---|---|---|
| | component, devices, IC’s both packaged & at wafer level | |
| **2.** | Device type supported BJT’s, FET’s, diodes, Resistors, IC’s Op-Amp, Comparators etc. | |
| **3.** | System should be supplied with Test fixture for discrete components /packaged devices supporting leads of 25 or more, DIP type, with SMA Connectors for Source/Emitter/cathode/resistor, Gate/Base & Substrate terminal. | |
| **4.** | The system should be shipped with all Software and Hardware including amplifiers ready for carrying out noise characterization on wafer level using an in-built hardware digitizer A/D converter. | |
| **5.** | The system should comply with established regulatory standards and directives such as EMC IEC/EN61326-1, Safety IEC/EN61010-1, & EU ROHS | |
| **6.** | System should be able to control parametric analyzer and probers automatically through provided User Interface. | |

## (D) Measurement Requirements

| **S.No.** | **Parameters** | **Desired Specifications** | **Compliance (Yes/No) with detailed specifications** |
|---|---|---|---|
| 1. | Number of supported device terminals as standard | 04 | |
| 2. | Corner frequency of Ultra Low Frequency LNA in Voltage amplifier | < 60 Hz | |
| 3. | Voltage amplifier noise floor @ 10 kHz | <0.75 nV/sqrt(Hz) Or <-175dBV²/Hz | |
| 4. | Number of voltage amplifiers | More than 2 | |
| 5. | Current amplifier corner frequency | < 260 Hz | |
| 6. | Current amplifier noise floor @ 10 kHz | <1 pA/sqrt(Hz) | |
| 7. | Number of current amplifiers | >1 | |
| 8. | Maximum current | ≥0.05 A | |
| 9. | Minimum current | <200pA | |

| | | | |
|---|---|---|---|
| 10. | Maximum voltage | ≥180 V | |
| 11. | Input resistance range | 0…100 MΩ | |
| 12. | Output resistance range | 0…≥ 50 MΩ | |
| 13. | Number of input / output resistance steps | ≥15 | |

## (E) TECHNICAL SPECIFICATIONS: ELECTRONIC SWITCHING UNIT (Qty. 01)

| S.No. | Parameters | Desired Specifications | Compliance (Yes/No) with detailed specifications |
|---|---|---|---|
| 1. | General | • The switching unit should provide exceptionally low-current leakage and Capacitance measurement compensation feature, it should have ability to support down to 20 fA measurements.<br>• It should have sufficient inputs to support up to 4-SMU, full-Kelvin configuration. It should have more than 12 inputs with each corresponding to a unique internal path, so all inputs can be used simultaneously. | |

| | | | |
|---|---|---|---|
| | | - Flexible use should be provided by a modular structure that supports multiple output configurations.<br>- It should support up to 30 MHz bandwidth for use with instruments such as pulse generators. Flexible operator control is provided by the supplemental LED display and front panel control via keypad or optional light pen.<br>- Switches DC current, DC voltage, capacitance and LCR meters<br>- Set and monitor connection status on front panel<br>- Configurated status display with LED matrix display<br>- Connection setup by light pen – Controls through GP-IB interface – Auto ground function – Self-test, relay function test – Relay cleaning (quote pricing for the entire | |

| | | | |
|---|---|---|---|
| | | noise system separately) | |
| 2. | I-V port , AUX port | 8 triaxial Ports (with Guard) and 6 BNC inputs Ports (with Guard) or better | |
| 3. | Output Channel | Triaxial Ports (with Guard), x12, x24, x36, and x48 Configurations Available or better | |
| 4. | Number of Slots in mainframe | More than 3 | |
| 5. | Channel Isolation | I-V port 10^13(ohm) or better, AUX port 1 x 10^9(ohm) or better | |
| 6. | Offset Current (Supplemental) | 75 fA or better I-V port | |
| 7. | IM Noise (RMS) (Supplemental) | 7.5fA I-V port | |
| 8. | Additional C measurement Error (Supplemental) | < ± 2 % + 0.2 pF | |
| 9. | Band width (at --3dB) | 30MHz | |
| 10. | Settling Time (Supplemental) | 3.0 sec at 300 fA | |

**System & Software Requirements**

| **Software /User Interface:** | |
|---|---|
| 12. System should be supplied with GUI environment, including the wafer map environment, data display & SQL data base. Software should provide ready to use DC and noise measurements routines for most standard devices including MOSFET, BJT, FET, and DIODE devices. It should support measurement routines in common languages enabling customer to write his own test routines as well. | |
| 13. Measurement results DC, noise power spectral density (1/f noise) and noise in the time domain (RTN) should be plotted & device statistics over wafer. Provided software should supports mathematical methods for data analysis including statistical analysis and digital filtering. Result/displayed data should save to ASCII format or to SQL Database compatible with device modelling softwares. It should support export for raw data. | |

| | |
|---|---|
| 14. System should support noise - data processing in time up to 15M sampling pts or more with Noise-Histogram of current & voltage with minimum time step of 3.5ns or better. | |
| 15. System should support multiple built-in biasing schemes for flicker noise characterization for FET, Diode, BJT, Resistors etc. Software should be able to select Rsource & Rload based on device types (FET,Diode, BJT etc.) | |
| 16. Software platform must be industry proven used by major foundries worldwide | |
| 17. The interface must display the state of measurement, important parameters, picked noise waveform, and PSD of noise. | |
| 18. The data analysis function must contain common models of 1/f noise, random telegraph noise, thermal noise, high frequency noise and data fitting tools. | |
| 19. In-built sine signal generator for gain characterization from 0.1 Hz to 10 MHz or better range. | |
| 20. The frequency resolution of the signal generator must be better than 100 mHz for f>30 Hz and 1 mHz for f<=30 Hz. | |
| 21. External control of measurement execution via GPIB or LAN | |
| 22. All cables to Analyzer and local amplifiers/ units included | |

## Optional Items

| S.No. | Parameters | Desired Specifications |
|---|---|---|
| 1. | General | • Option to mount optical fiber on probe positioners in order to illuminate sample and or collect reflected/emitted light, any required accessories should also be quoted. |

## Other Terms & Conditions:

| | | | |
|---|---|---|---|
| **1.** | **Calibration Service** | 3. System should support Guided system calibration procedure & Self-Calibration option should be provided.<br>4. Vendor to quote for 3 years calibration of the system at customer site with external signal source | **Compliance (Yes/No) with detailed specifications** |
| **2.** | **System/Tool Acceptance** | 2. All parameters (or a subset) stated below and according to tool & process specifications could be tested during start-up session and are mandatory for the final tool acceptance.<br>Acceptance test Method must be documented in the Vendor Statement of Work. | **Compliance (Yes/No) with detailed specifications** |

| | | | |
|---|---|---|---|
| | | These methods may be applied to determine operation properties:<br>• Connection to test fixture (only if option was selected) and setup test on discrete device<br>• Connection to wafer prober<br>• Noise floor benchmarking at 10 KHz (open state vs. with connected prober)<br>• Manual single device Measurement of RTN and noise on reference wafers and benchmark with existing data<br>• Semi-Automated/manual measurement of RTN and noise on wafer prober station<br>• Reproducibility of abovementioned measurement after 24 hours | |
| **3.** | **Vendor Selection/Bid Evaluation Requirement/Criteria** | | **Compliance (Yes/No) with detailed specifications** |
| | • Number of similar units installed in semiconductor industry worldwide | • *>50* | |
| | • Number of similar units installed within India | • *At least 1* | |
| | • Vendor to attach detailed published technical brochure /data sheet as supporting document. And website link to be provided for the same. | | |
| **4.** | **Installation and Commissioning** | i) Installation, complete interfacing of the system with its subsystems, and commissioning is to be carried out by the vendor's factory-trained engineers, followed by a demonstration of the system's performance to the user's complete satisfaction.<br>ii) An estimated time schedule for installation, commissioning and training must be provided. | **Compliance (Yes/No) with detailed specifications** |
| **5.** | **Training** | i) The manufacturer/supplier should provide at least seven days onsite training initially during installation<br>ii) The supplier or manufacturer should also provide dedicated five days advanced training | **Compliance (Yes/No) with detailed specifications** |

| | | | |
|---|---|---|---|
| | | subsequent to the above training installation.<br>iii) Regular follow up training during the period of extended ly convenient dates for hardware, ation to the laboratory personnel in eration and maintenance of the | |
| **6.** | **Warranty** | System should be covered for comprehensive warranty for 3 years from the manufacturer **All parts including spares should be covered under the warranty and this fact should be clearly and explicitly specified in the tender document.**<br>The comprehensive Warranty should cover:<br>1. All parts including accessories, spares and labour on site<br>2. Free maintenance and service on site or at factory with no cost, and<br>3. Regular up-gradation | **Compliance (Yes/No) with detailed specifications** |
| **7.** | **Power Supply** | Should meet Indian Power ly without use of external | **Compliance**<br>**iled specifications** |
| **8.** | **System Consumable Parts** | Basic frequently required spares for the entire period of extended f these items should be attached . The standard scope of supply rformance verification standards e list of consumables for trouble | **Compliance**<br>**iled specifications** |
| **9.** | **Support and Service:** | 1. The manufacturer and/or their Indian representative must have at least two qualified and factory trained service engineer in India to be able to attend to service at IIT Delhi within 48 hours on submitting a complaint. Training certificates from the manufacturer have to be provided with the tender.<br>2. For warranty period only factory trained and certified engineers are acceptable to attend the service.<br>3. The response time with an engineer on site must be less than 48 hours from the notification of | **Compliance (Yes/No) with detailed specifications** |

|  |  |  |  |
|---|---|---|---|
|  |  | the failure. The company must provide evidence that it can fulfil this requirement.<br>4. In case the parts are required to be imported for repairs, the same should be made available within 2 weeks from the date of reporting of the issue. Any extension in this time will need to be compensated by the manufacturer by extending the comprehensive warranty by the excess period taken (i.e. period beyond 2 weeks) in completing the repairs.<br>5. A 10% performance<br>to be maintained during<br>led warranty. |  |
| **10.** | **Bid Evaluation/Special Terms for Bidders** | - Bidders must provide point-by-point compliance to all tendered Technical Specifications, Technical Requirements and Special Terms. Where required, vendor must provide compliance, deviation if any and requisite justification to meet tender requirements in total. Without such details, bids may be summarily rejected at discretion of IIT Delhi.<br>- Bids complying with only part requirements of tendered specifications are liable to be rejected. Bidder is accountable for supply, integration, installation and support of all quoted parts including any third party parts not manufactured by them, akin to a turnkey bid. All necessary authorizations must be obtained from third party/part suppliers confirming support to the primary bidder to quote, honor OEM warranty and support during integration, | **Compliance (Yes/No) with detailed specifications** |

| | | | |
|---|---|---|---|
| | | warranty period and for life of the product.<br>• Vendors for main test equipment and probe stations must have their own technically equipped application engineer / engineering team to provide installation, training and after sales support.<br>• Primary vendor OEM should have well established repair and calibration facility for all supplied main equipment within India.<br>• At least 5 similar setup should be found in India. | |

I have also enclosed all relevant documents in support of my claims, (as above) in the following pages.

I have also enclosed all relevant documents in support of my claims, (as above) in the following pages.

**Signature of Bidder**

**Name: ___________________________**

**Designation: _______________________**

**Organization Name: __________________________Contact No. : ____________________________**

**ANNEXURE-II**

**<< Organization Letter Head >>**

## DECLARATION SHEET

We, ________________________________________ hereby certify that all the information and data furnished by our organization with regard to this tender specification are true and complete to the best of our knowledge. I have gone through the specification, conditions and stipulations in details and agree to comply with the requirements and intent of specification.

This is certified that our organization has been authorized (Copy attached) by the OEM to participate in Tender. We further certified that our organization meets all the conditions of eligibility criteria laid down in this tender document. Moreover, OEM has agreed to support on regular basis with technology / product updates and extend support for the warranty.

The prices quoted in the financial bids are subsidized due to academic discount given to IIT Delhi.

| | |
|---|---|
| We, further specifically certify that our organization has not been Black Listed/De Listed or put to any Holiday by any Institutional Agency/ Govt. Department/ Public Sector Undertaking in the last three years. | NAME & ADDRESS OF<br>THE Vendor/ Manufacturer / Agent |
| 1 Phone | |
| 2 Fax | |
| 3 E-mail | |
| 4 Contact Person Name | |
| 5 Mobile Number | |
| 6 GST Number | |
| 7 PAN Number | |
| (In case of on-line payment of Tender Fees)<br>8 UTR No. (For Tender Fee) | |
| (In case of on-line payment of EMD)<br>9 UTR No. (For EMD) | |
| 10 Kindly provide bank details of the bidder in the following format:<br>a) Name of the Bank | |
| b) Account Number | |
| c) Kindly attach scanned copy of one Cheque book page to enable us to return the EMD to unsuccessful bidder | |

**(Signature of the Tenderer)**

**Name:**

**Seal of the Company**

**Annexure-III**

## List of Govt. Organization/Deptt.

| List of Government Organizations for whom the Bidder has undertaken such work during last three years (must be supported with work orders) | | |
|---|---|---|
| **Name of the organization** | **Name of Contact Person** | **Contact No.** |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| Name of application specialist / Service Engineer who have the technical competency to handle and support the quoted product during the warranty period. | | |
|---|---|---|
| **Name of the organization** | **Name of Contact Person** | **Contact No.** |
| | | |
| | | |
| | | |
| | | |
| | | |

**Signature of Bidder**

**Name:** ____________________________

**Designation:** ________________________

**Organization Name:** ___________________________

**Contact No. :** _____________________________

# PREVIOUS SUPPLY ORDER DETAILS

**Annexure - IV**

**Name of the Firm**____________________________________

| Order placed by (Full address of Purchaser) | Order No. and Date | Description and quantity of order equipment | Value of order | Date of Completion of delivery as per contract | Has the equipment been installed satisfactorily (Attach a Certificate from the Purchaser/ Consignee) | Contact person along with Telephone No., Fax No. and email address) |
|---|---|---|---|---|---|---|
| | | | | | | |

Signature and Seal of the Manufacturer/ Bidder

_________________________________

Place: ___________________________

Date: ___________________________

# ORIGINAL EQUIPMENT MANUFACTURING (OEM) MANUFACTURING AUTHORISATION FORM

## (On Letter Head of Manufacturer)

**Annexure-V**

Tender No. :- ……………………………………………. Date:- …………..

To
The Director,
Indian Institute of Technology Delhi,
New Delhi- 110016

Dear Sir,

We manufactures of original equipment at (…………………………..address of factory……………………………) do hereby authorize M/s (Name and address of Agent) to submit a bid, negotiate and receive the order format you against your tender enquiry.
No company or firm or individual other than M/s. …………………………………….. I authorized to bid, and conclude the contract in regard to this business.

We hereby extend our full guarantee and warranty as per clause ………………………… of the terms and conditions NIQ for the goods and services offered by the above firm.

Yours Faithfully,

(Name)

(Name & Seal of manufactures)

Note:- This letter of authority should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to bind the manufacturer. It should be included by bidder in its techno-commercial unpriced bid.

# Bid Submission

## Online Bid Submission:

The Online bids (complete in all respect) must be uploaded online in **two** Envelops as explained below:-

| **Envelope – 1**<br>(Following documents to be provided as single PDF file) | | | |
|---|---|---|---|
| **Sl. No.** | **Document** | **Content** | **File Types** |
| 1. | Technical Bid | Compliance Sheet as per Annexure - I | .PDF |
| 2. | | Organization Declaration Sheet as per Annexure - II | .PDF |
| 3. | | List of organizations/ clients where the same products have been supplied (in last two years) along with their contact number(s). (Annexure-III) | .PDF |
| 4. | | Technical supporting documents in support of all claims made at Annexure-I (Annexure-IV) | .PDF |
| 5. | | PREVIOUS SUPPLY ORDER as per Annexure - IV | .PDF |
| 6. | | ORIGINAL EQUIPMENT MANUFACTURING (OEM) MANUFACTURING AUTHORISATION FORM as per Annexure - V | .PDF |
| **Envelope – 2** | | | |
| Sl. No. | **Document** | **Content** | |
| 1. | Financial Bid | Price bid should be submitted in given BOQ_XXXX.xls format. (***Note: -Comparison of prices will be done ONLY on the bids submitted for the Main Equipment and anything asked as 'Optional' in the specs is not to be included for overall comparison.)*** Bids for optional items are to be submitted in 'sheet2_Quote for optional items' | .XLS |