## मौलाना आज़ाद राष्ट्रीय प्रौद्योगिकी संस्थान भोपाल Maulana Azad National Institute of Technology Bhopal (भारत सरकार, शिक्षा मंत्रालय के अधीन राष्ट्रीय महत्व का संस्थान) (An Institution of National Importance under MoE, Govt. of India)



## सीमित निविदा पूछताछ LIMITED TENDER ENQUIRY

सामग्री / वस्तु का नाम Name of Goods/Items

## **Phasor Measurement Unit**

Website	www.manit.ac.in	Fax No:	0755-2670562
Email Address:	info@manit.ac.in	Telephone	0755-4051000, 0755-4052000
		No:	

	अनुक्रमणिका / INDEX				
क्रमांक	क्रमांक विवरण /				
S No	Description	Page No.			
1	निविदा आमंत्रण सूचना	03			
	Notice Inviting Tenders				
2	एक नजर में महत्वपर्णू जानकारियाँ	04			
	Important Information at a Glance				
3	बोलीदाता के लिए निर्देश	05-08			
	Instructions to Bidders				
4	संलग्नक –। वस्तु की मात्रा एवं विवरण	09-11			
	ANNEXURE-I Bill of Quantity and Specifications				
5	संलग्नक – ।। मूल्य बोली का प्रारूप	12			
	ANNEXURE-II Price Bid Form				

मौलाना आज़ाद राष्ट्रीय प्रौद्योगिकी संस्थान, भोपाल Maulana Azad National Institute of Technology Bhopal (भारत सरकार, शिक्षा मंत्रालय के अधीन राष्ट्रीय महत्व का संस्थान) (An Institution of National Importance under MoE, Govt. of India) No. MANIT/EE/2025-26/009 दिनांक / Date: 10/09/2025 निविदा आमंत्रण सूचना NOTICE INVITING TENDERS सामग्री / वस्तु का नाम Phasor Measurement Unit Name of Goods/Items उपरोक्त सामग्री / वस्तु के लिए निविदाएँ अमंत्रित की जाती हैं। इच्छुक निर्माता / अधिकृत भागीदार / एंजेन्सियाँ, अधिक जानकारी के लिए संस्थान के वेबसाईट और **CPPP** वेबसाईट www.manit.ac.in www.eprocure.gov.in/epublish/app पर लाग-इन कर सकती हैं। निविदा दस्तावेज डाउनलोड कर विधिवत रूप से उप—कुलसचिव (भण्डार एवं क्रय) मौलाना आजाद राष्ट्रीय प्रौद्योगिकी संस्थान, भोपाल – 462003 जमा किया जा सकता है। सम्पूर्ण निविदा मय दस्तावेज प्रस्तृत करने की अंतिम तिथि 30/09/2025 अपरान्ह 12.00 बर्जे तक है। संस्थान निदेशक, बिना कोई कारण बताए किसी या संपूर्ण निविदा को पूर्ण या आंशिक रूप से स्वीकार या अस्वीकार करने का अधिकार सुरक्षित है। कुलसचिव Tenders are invited for aforesaid Goods/ Items. Interested Manufacturers/ Authorized Partner/Agencies may log on Institute website www.manit.ac.in and CPPP website www.eprocure.gov.in/epublish/app for further details. Tender Document can be downloaded and the duly completed be submitted to the Deputy Registrar (Stores & Purchase) Maulana Azad National Institute of Technology- Bhopal- 462003. Last date of submission of complete tender document is 30/09/2025 up

Last date of submission of complete tender document is 30/09/2025 up to 12.00 hours. The Director of the Institute reserves the right to accept or reject any or the entire tender in full or in part without assigning any reason whatsoever.

Registrar

## मौलाना आज़ाद राष्ट्रीय प्रौद्योगिकी संस्थान, भोपाल Maulana Azad National Institute of Technology Bhopal

एक नजर में महत्वपर्ण जानकारियाँ				
IMPORTANT INFORMATION AT A GLANCE				
IVII OKTITIVI II VI OKWITITOTVITI II GEITIVEE				
निविदा क्रमांक एवं दिनांक	ANIT/EE/20	25-26/009		
Tender No & Date	Date: 1	10/09/2025		
निविदा का कार्य	`		ENDER	
सामग्री / वस्तु का संक्षिप्त विवरण	,	संख्या	टिप्पणी	
Brief Description of Goods/Items	S	Quantity	Remarks	
Phasor Measurement Un	it	01	संलग्नक–। पर विस्तृत विवरण Detailed Specification at Annexure-I	
निविदा की अनुमानित लागत		Rs.12000	00.00	
Estimated cost of Tender				
आपूर्ति एवं स्थापना का स्थान		Electrical E	ngineering Department	
Location of Supplies & Installation	n	at Institute		
निविदा दस्तावेज की उपलब्धता		www.manit.ac.in		
Availability of Tender Document		www.eproc	ure.gov.in/epublish/app	
निविदा जमा करने के अंतिम दिनांक एवं सम Last Date & Time of Submission Tender		30/09/2025 up to 12:00 hours		
निविदा खुलने की दिनांक एवं समय Date & Time of Opening of Bids		30/09/2025 at 15:00 hours		
निविदा वैधता की अवधि		<b>60 days</b> fro	om the date of opening of	
Tender Validity period		the Technical Bid		
वितरण / आपूर्ति की अवधि		04 to 06 v	weeks from the date of	
Delivery/ Supply period		issue of Supply Order		
वारंटी अवधि		Two year	(s) from the date of	
Warranty Period		successful Installation &		
		Commission items	ning of equipments/	
बोली सुरक्षा / बयाना राशि		As per s	lab mentioned in the	
Bid Security/ EMD		document.		
निष्पादन सुरक्षा राशि		As per slab mentioned in the		
Performance Security Amount		document		

	बोलीदाता के लिये निर्देश / अनुदेश / INSTRUCTIONS TO BIDDERS					
1	Scope	of Supplies & Work:				
	a	The Goods/ Items shall be supplied as per the Bill of Quantity and Specifications				
		mentioned in ANNEXURE-I. However higher specification of equipment				
	1	may be considered subject to their cost economics competitiveness.				
	b	Bidder should supply illustrated leaflet giving technical details of Goods/ Item and attach the same with the tender to facilitate evaluation.				
	С	No option(s) regarding price of Goods/ Items shall be entertained in the price				
		bid. Bidder should quote the price of only one best & appropriate model of				
		Good/Item available with them.				
	d	Purchase Preference will be given to "Make in India products" as defined in				
		Purchase Preference with Local Content (PP-LC) Policy. Accordingly,				
		bidders with Local Content less than or equal to 20% will be treated as "Non				
		Local Supplier". The prescribed LC shall be applicable on the date of Bid				
		opening. The bidder shall submit an undertaking along with the bid stating the				
		bidder meets the mandatory minimum LC requirement and such undertaking				
		shall become a part of the contract. Local content certificate from practicing				
		Cost Accountant or practicing Chartered Accountant giving the percentage of local content shall be acceptable. The local content certificate shall be				
		submitted along with each invoice raised.				
	e	Purchase preference will be given to MSEs as defined in Public Procurement				
		Policy for Micro and Small Enterprises (MSEs). If the bidder wants to avail				
		the Purchase preference, the bidder must be the manufacturer of the offered				
		product in case of bid for supply of goods. Traders are excluded from the				
		purview of Public Procurement Policy for Micro and Small Enterprises. In				
		respect of bid for Services, the bidder must be the Service provider of the				
		offered Service. Relevant documentary evidence in this regard shall be				
		uploaded along with the bid in respect of the offered product or service. If L-1				
		is not an MSE and MSE Seller (s) has/have quoted price within L-1+ 15%				
		(Selected by Buyer)of margin of purchase preference /price band defined in				
		relevant policy, such Seller shall be given opportunity to match L-1 price and				
		contract will be awarded for 25%(selected by Buyer) percentage of total				
		QUANTITY.				
	f	Start-ups as recognized by Department for Promotion of Industry and Internal				
		Trade (DPIIT), claiming EMD exemption and relaxation in turnover as				
		prescribed in the certificate / Start Up scheme of DPIIT.  Bidder may be asked to supply sample of offered product/item before supply				
	g	in bulk quantities.				
	h	Where ISI certification marked goods are available in market, procurement				
		should generally be limited to goods with those or equivalent marking only.				
		The warranty/AMC required must be specified				
	i	After the supply of Goods/ Items & Accessories as mentioned in the				
		ANNEXURE-I, the bidder has to execute its installation at the designated				
		location(s).No extra cost shall be paid for this reason.				
2	Delive	ry of Supplies & Installation:				
	a	The purchaser interested for complete delivery of equipments along with				
		Installation, Testing and Commissioning within the period as mentioned at				
		IMPORTANT INFORMATION AT GLANCE sheet. However, the bidder has an				
		option to submit the best delivery with installation time.				

	b	The material shall be inspected on receipt at site and bidder shall be					
		responsible for any damage during the transit of Goods/Items.					
	С	The insurance cover including insuring the goods against the loss or damage					
		incidental to manufacture or acquisition, transportation, storage and delivery/ installation shall be obtained by bidder in his own name and not in the name of					
			ained by bidder in h	is own name a	nd not in the name of		
3	XX/	purchases.  nty & After Sales Service					
3	a	The bidder shall offer		encive warrant	y of equipments as		
	a	mentioned at IMPORTAN					
		location & shall cover					
		having limited life etc. The purchaser is not liable to pay any extra charges on					
		any account during warranty period.					
	b	The bidder shall ensur		sales services	during the warranty		
		period to the satisfaction					
4	Eligibi	lity Criteria:					
	a	Bidder should be a Cor					
		operational from at leas		as on close dat	te of tender. Copy of		
		registration shall be atta					
	b	The Bidder must hav					
		Central/State governme	-	•			
	_	company in India. Copie					
	С	Bidder should have min of tender) in last year .C		•			
	d	The Earnest Money Dep			be subilitied.		
	e	Bidder should have GS7					
	f	OEM Authorization Let		e i i i v botii.			
5	Earnes	st Money Deposit:					
	The	v 1					
		bludel is illistracte	a to subliff		the form of		
		R/RTGS/NEFT/BG/Ban	k deposition slip ald	ong with bid to	prove the transfer of		
			k deposition slip ald	ong with bid to	prove the transfer of		
	paymen	PR/RTGS/NEFT/BG/Band to the purchaser's Acco Tender Value	k deposition slip ald ount as per EMD sl EMD R	ong with bid to ab mentioned b	prove the transfer of		
	paymen	PR/RTGS/NEFT/BG/Band ont to the purchaser's Acco	k deposition slip ald ount as per EMD sl	ong with bid to ab mentioned b	prove the transfer of below:		
	Less tha	PR/RTGS/NEFT/BG/Band to the purchaser's Acco Tender Value	k deposition slip ald ount as per EMD sl EMD R	ong with bid to ab mentioned b tate	prove the transfer of below:		
	Less tha	PR/RTGS/NEFT/BG/Band to the purchaser's Account to the purchaser's Account	k deposition slip aldount as per EMD sl EMD R NIL 2% of Tender Value in nearest in 100 ruj	ong with bid to ab mentioned bate e rounded off	prove the transfer of below:		
	Less that	PR/RTGS/NEFT/BG/Ban at to the purchaser's Acco Tender Value an 2.50 Lakhs an 2.50 lakhs to 25.00 Purchaser's Bank Acco	k deposition slip aldount as per EMD sl EMD R NIL 2% of Tender Value in nearest in 100 rupount details:	ong with bid to ab mentioned bate e rounded off bees.	prove the transfer of pelow:  Remarks		
	Less that Between Lakhs	PR/RTGS/NEFT/BG/Band to the purchaser's Account to the purchaser's Account	k deposition slip aldount as per EMD sl EMD R NIL 2% of Tender Value in nearest in 100 ruj	e rounded off bees.  Bank A/c	prove the transfer of below:		
	Less that Between Lakhs	PR/RTGS/NEFT/BG/Band nt to the purchaser's Account Value nn 2.50 Lakhs nn 2.50 lakhs to 25.00 Purchaser's Bank Account Name	k deposition slip aldount as per EMD sl EMD R NIL 2% of Tender Value in nearest in 100 rupount details: Bank Name	e rounded off bees.  Bank A/c No.	prove the transfer of below:  Remarks  Bank IFS Code		
	Less that Between Lakhs	PR/RTGS/NEFT/BG/Ban at to the purchaser's Acco Tender Value an 2.50 Lakhs an 2.50 lakhs to 25.00 Purchaser's Bank Acco	k deposition slip aldount as per EMD sl EMD R NIL 2% of Tender Value in nearest in 100 rupount details:	e rounded off bees.  Bank A/c	prove the transfer of pelow:  Remarks		
	Less that Between Lakhs	PR/RTGS/NEFT/BG/Band nt to the purchaser's Account Value nn 2.50 Lakhs nn 2.50 lakhs to 25.00 Purchaser's Bank Account Name	k deposition slip aldount as per EMD slount as p	e rounded off bees.  Bank A/c No. 10020150107	Remarks  Bank IFS Code  SBIN0001608		
	Less that Betwee Lakhs	PR/RTGS/NEFT/BG/Ban nt to the purchaser's Acco Tender Value nn 2.50 Lakhs nn 2.50 lakhs to 25.00 Purchaser's Bank Acco Account Name	k deposition slip aldount as per EMD slount as p	e rounded off bees.  Bank A/c No. 10020150107	Bank IFS Code  SBIN0001608  on after placement of		
	Less that Betwee Lakhs	PR/RTGS/NEFT/BG/Bandat to the purchaser's Account 2.50 Lakhs and 2.50 Lakhs and 2.50 lakhs to 25.00  Purchaser's Bank Account Name  Director MANIT Bhopal  The EMD will be return order and successful bid The bidder seeking E	k deposition slip aldount as per EMD slount details:  Bank Name  State Bank of India and to the unsuccess lider shall get its EMEMD exemption, respectively.	e rounded off bees.  Bank A/c No. 10020150107  sful bidders soot ID after supply must submit to the above to	Bank IFS Code  SBIN0001608  on after placement of of material.  the valid supporting		
	Less that Between Lakhs a	PR/RTGS/NEFT/BG/Ban at to the purchaser's Account Value an 2.50 Lakhs an 2.50 lakhs to 25.00  Purchaser's Bank Account Name  Director MANIT Bhopal  The EMD will be return order and successful bid The bidder seeking Edocument for the relevance and to the successful bid document for the relevance and to the seeking Edocument for the relevance and the seeking Edocument for t	k deposition slip aldount as per EMD slount as per EMD slount as per EMD slount as per EMD slound sl	e rounded off bees.  Bank A/c No. 10020150107  sful bidders soot D after supply must submit to the supply mufacturers for the submit to the supply mufacturers for the submit to the sub	Bank IFS Code  SBIN0001608  on after placement of of material. he valid supporting r goods and service		
	Less that Between Lakhs a	PR/RTGS/NEFT/BG/Ban and to the purchaser's Account Value an 2.50 Lakhs an 2.50 lakhs to 25.00  Purchaser's Bank Account Name  Director MANIT Bhopal  The EMD will be return order and successful bid The bidder seeking Educument for the relevance providers for services	k deposition slip aldount as per EMD slount as per EMD slount as per EMD slount as per EMD slount details:  Bank Name  State Bank of India and to the unsuccess der shall get its EME EMD exemption, revant category. Mai are eligible for eligible shalls.	e rounded off bees.  Bank A/c No. 10020150107  sful bidders soor ID after supply must submit to nufacturers for exemption from	Bank IFS Code  SBIN0001608  on after placement of of material.  the valid supporting r goods and service in EMD under MSE		
	Less that Between Lakhs a b	PR/RTGS/NEFT/BG/Ban at to the purchaser's Account value an 2.50 Lakhs an 2.50 lakhs to 25.00  Purchaser's Bank Account Name  Director MANIT Bhopal  The EMD will be return order and successful bid The bidder seeking Edocument for the relevance providers for services Category. Traders are expenses and to the providers are expenses are expenses.	k deposition slip aldount as per EMD slount as per EMD slount as per EMD slount as per EMD slount as per EMD and slount details:  Bank Name  State Bank of India and to the unsuccess der shall get its EME EMD exemption, revant category. Manare eligible for excluded from the purchase states and slound as a second slound slou	e rounded off bees.  Bank A/c No. 10020150107  sful bidders soor ID after supply must submit to nufacturers for exemption from	Bank IFS Code  SBIN0001608  on after placement of of material.  the valid supporting r goods and service in EMD under MSE		
6	Less that Between Lakhs a b	PR/RTGS/NEFT/BG/Ban at to the purchaser's Account Value an 2.50 Lakhs an 2.50 lakhs to 25.00  Purchaser's Bank Account Name  Director MANIT Bhopal  The EMD will be return order and successful bid The bidder seeking Edocument for the relevance for services Category. Traders are extended to the comment of Tender Document of Tender Document of Tender Document of Tender Document to the providers are extended to the providers are extended to the providers are extended to the purchaser's Account Name	EMD R  NIL  2% of Tender Value in nearest in 100 rupount details:  Bank Name  State Bank of India need to the unsuccess der shall get its EMEMD exemption, revant category. Manare eligible for excluded from the putent:	e rounded off bees.  Bank A/c No. 10020150107  sful bidders soot Dafter supply must submit to nufacturers for xemption from arview of this p	Bank IFS Code  SBIN0001608  on after placement of of material. he valid supporting r goods and service n EMD under MSE olicy.		
6	Less that Between Lakhs a b	PR/RTGS/NEFT/BG/Ban and to the purchaser's Account Value an 2.50 Lakhs an 2.50 lakhs to 25.00  Purchaser's Bank Account Name  Director MANIT Bhopal  The EMD will be return order and successful bid The bidder seeking Educument for the relevance for services Category. Traders are examined any time prior to the second to the	EMD R  NIL  2% of Tender Value in nearest in 100 rup unt details:  Bank Name  State Bank of India ned to the unsuccess der shall get its EM EMD exemption, revant category. Mar are eligible for excluded from the put tent: e date submission of	e rounded off bees.  Bank A/c No. 10020150107  Sful bidders soor ID after supply must submit to nufacturers for exemption from arview of this purple of bids, the purple of bids of the continuous and the continuous architectures of the continuous architectures architectu	Bank IFS Code  SBIN0001608  on after placement of of material.  the valid supporting r goods and service in EMD under MSE olicy.  The chaser, may, for any		
6	Less that Between Lakhs a b	PR/RTGS/NEFT/BG/Ban at to the purchaser's Account Value an 2.50 Lakhs an 2.50 lakhs to 25.00  Purchaser's Bank Account Name  Director MANIT Bhopal  The EMD will be return order and successful bid The bidder seeking Educument for the relevance for services Category. Traders are exament of Tender Document At any time prior to the reason, whether at its or	EMD R  NIL  2% of Tender Value in nearest in 100 rupount details:  Bank Name  State Bank of India need to the unsuccess der shall get its EME EMD exemption, revant category. Man are eligible for excluded from the putent:  e date submission of wn initiative or in results.	e rounded off bees.  Bank A/c No. 10020150107  In after supply must submit to the subm	Bank IFS Code  SBIN0001608  on after placement of of material.  the valid supporting regoods and service in EMD under MSE olicy.  The chaser, may, for any darification sought by		
6	Less that Between Lakhs a b	PR/RTGS/NEFT/BG/Ban at to the purchaser's Account value an 2.50 Lakhs an 2.50 lakhs to 25.00  Purchaser's Bank Account Name  Director MANIT Bhopal  The EMD will be return order and successful bid The bidder seeking Educument for the relevance providers for services Category. Traders are examined at any time prior to the reason, whether at its or a prospective bidder,	EMD R  NIL  2% of Tender Value in nearest in 100 rupount details:  Bank Name  State Bank of India ned to the unsuccess der shall get its EME EMD exemption, revant category. Marare eligible for excluded from the putent:  e date submission of win initiative or in ramend bid docum	e rounded off bees.  Bank A/c No. 10020150107  sful bidders soot Dafter supply must submit to the su	Bank IFS Code  SBIN0001608  on after placement of of material. he valid supporting r goods and service a EMD under MSE olicy.  The chaser, may, for any tarification sought by g corrigendum. The		
6	Less that Between Lakhs a b	PR/RTGS/NEFT/BG/Ban at to the purchaser's Account Value an 2.50 Lakhs an 2.50 lakhs to 25.00  Purchaser's Bank Account Name  Director MANIT Bhopal  The EMD will be return order and successful bid The bidder seeking Educument for the relevance for services Category. Traders are exament of Tender Document At any time prior to the reason, whether at its or	EMD R  NIL  2% of Tender Value in nearest in 100 rupount details:  Bank Name  State Bank of India need to the unsuccess der shall get its EME EMD exemption, revant category. Manare eligible for excluded from the put tent:  e date submission of win initiative or in reamend bid docume notified/ pub	Bank A/c No. 10020150107  Sful bidders soo ID after supply must submit t nufacturers for exemption from arview of this p of bids, the puresponse to a clause of the submit tent by issuing lished in exemption of the submit tent by issuing	Bank IFS Code  SBIN0001608  on after placement of of material. he valid supporting r goods and service n EMD under MSE olicy.  ochaser, may, for any arification sought by g corrigendum. The tendering website		

7	Price Bid				
	a The Prices should be quoted in Indian Rupees only.				
	b Purchaser (being a research Institution) is registered with the Department of Scientific & Industrial Research (DSIR) for the purpose of availing custom duty exemption in terms of GoI Notification No. 51/96-Customs dated 23 July 1996. The bidder should quote their prices considering the exemption certificate. If any certification needed by bidder, may be given to avail this benefit.				
	c Bidder shall take into account all costs including unloading at the location of purchaser, cartage etc. for giving delivery of material at site(s) before quoting the rates. In this regard no claim what so ever shall be entertained.				
	d The bidders are advised not to indicate any separate discount. Discount, if any should be merged with the quoted unit prices.				
	e	The price quoted in price bid shall be firm but subject to change in rate of applicable taxes if any.			
	f	The Bidder should avoid the use of vague term such as "Extra as applicable". Such offers shall be treated as non-responsive.			
	g	No extra payment shall be paid on account of any discrepancy in nomenclature of items. The bidder shall seek clarifications if any before submitting the tender.			
8	Bid Su	bmission:			
		The bidder is instructed to give their offline offer through Single bid system for this tender. The tender must be placed in a properly sealed envelope superscribed "Tender for the Supply of Phasor Measurement Unit." with tender inquiry number and its due date addressed to The Director, Maulana Azad National Institute of Technology- Bhopal- 462003 and must reach the office of The Deputy Registrar- Stores & Purchase, Maulana Azad National Institute of Technology Bhopal on or before as mentioned at IMPORTANT.			
		<b>Institute of Technology, Bhopal</b> on or before as mentioned at IMPORTANT INFORMATION AT GLANCE sheet. The sealed Envelop should be consisting of followings:			
	a	Copy of Certificate of Registration of firm, GST Number and Income Tax PAN.			
	b	Proof of submission of EMD amount			
	c	Copy of Purchase Order (PO) received from government shall be attached.			
	d	Certificate mentioning of Turnover for the last year and OEM authorization letter.			
	e	<b>BOQ</b> Annexure-I and Price <b>Bid</b> Annexure-II duly filled and signed.			
9		tion of Bids:			
		stitute may evaluate all the required Goods/Items in this tender together or			
		ndent depending upon nature of items & compatibility and compare the			
		ons determined to be substantially responsive i.e. which			
	a	are properly signed;  Confirm to the aligibility criteria of the yander; and			
	b	Confirm to the eligibility criteria of the vendor; and Confirm to the terms & conditions, and technical specifications.			
	d d	In case, required goods/items in this tender are independent and complete in			
	u	nature. Institute may evaluate independently as far as price is concerned for placing order(s).			
10	Validit	y of Tender:			
10	a	The tender shall be valid as mentioned at IMPORTANT INFORMATION AT			
	u	GLANCE sheet. Terms and financial details submitted in the bid shall be treated as firm during the validity period.			
<u> </u>		samp are target berroa.			

	_						
	b In exceptional circumstances, prior to the expiry of the bid validity period, the						
		purchaser may request bidders to extend the period of validity of their bids.					
1.1	The request and the responses shall be made in writing.  Notification of Award:						
11			no poriod of hid	1 201;	idity the pure	hasar shall natify tha	
	a	Prior to the expiry of the successful bidder, in w	•		• •	•	
		letter shall specify the	•				
		consideration of the S					
		location.	upply of Gool	<i>1</i> 57 10	vitil til	details of selected	
	b	Purchase/ Contract orde	er shall preferab	olv be	e issued in fav	our of bidder. Bidder	
		may request in advance					
		OEM of product. In this					
12	Perfor	mance Security Deposit	:				
		•				y in the form of	
		R/RTGS/NEFT/BG/Ban			allation of ma	terial along with the	
	bill to t	the Institute as per slab n	nentioned below	v:			
		der/ Contract Value		D Ra	ite	PSD Period	
		an 2.50 Lakhs	NIL	7 1	1 1 00	Warranty period	
	Lakhs	n 2.50 lakhs to 25.00	5% of Tender V in nearest in 10			plus two month	
		D1		o rup	ees.	extra	
	a	Purchaser's Bank Account Name	Bank Name		Bank A/c	Bank IFS Code	
		Account Name	Dank Name		No.	Dank IFS Code	
		Director MANIT Bhopal	State Bank	of	10020150107	SBIN0001608	
	India						
	b	In case of breach of co					
		bidder shall be blackliste		od as	decided by th	e competent authority	
		in addition to cancellatio		ad +a	the hidden	without one intonoct	
	С	Performance Security s whatsoever, after comple					
13	Penalt	ty Clause:	otion wairanty po	crioa	из вреенией на	the tender.	
	a	The bidder shall indica	te the period wi	ithin	which the ord	ered quantity will be	
		supplied along with I					
		bidder shall note that in	case bidder fai	ils to	do so within t	the period of delivery	
		indicated by the bidder	in price bid of	this	tender, penalt	y @ 0.50 % on total	
		value of the PO per w					
		weeks. It means, the b					
1.4	<b>T</b>	maximum of 20 weeks	after expiry of s	sched	uled delivery	date.	
14		of Payment:	1 '.1' 20	0 1	1 1	C 1 1	
	a	The Payment shall be installation of Goods/ It		) day	s by purcha	aser after supply and	
15	Jurisd		ems.				
13	a	In the event of any	dispute the le	oal 1	matter shall	he subjected to the	
	u	jurisdiction of Bhopal c	•	gai	matter shan	be subjected to the	
16	Details	of Contact Persons for Q					
Nan	ne	Dr. Priyanka Pal	iwal	Dr	Mukesh Ku	ımar Kirar	
	ignatio	•			sociate Profe		
		9893020105	5501			DOO(1	
Ema	Email priyakapaliwal@manit.ac.in						

		ANN	EXUR
	मौलाना आज़ाद राष्ट्रीय प्रौद्योगिकी संस्थान, भोपाल		
	Maulana Azad National Institute of Technology Bho	pal	
	सामग्री की मात्रा एवं विवरण		
	BILL OF QUANTITY AND SPECIFICATION	J	
0.	Name of Product/ Items	Quantity	Remai
	Name of Froducti tems	· Carrenty	
	Desired Technical Specification of Phasor Measurement Unit	01	
	•	01	
	• The PMUs shall have phasor measurements accuracy as per latest	No.	
	IEEE Standard C37.118.1-2011 and C37.118.1a-2014, data		
	reporting to PDC as per standard IEEE C37.118.2-2011		
	PMUs shall be compliant to Class M and P as specified by IEEE		
	C37.118 Standards (latest version released in 2014)		
	<ul> <li>The PMU should be highly resilient and reliable at rejecting harmonics and out of band inferences</li> </ul>		
	The PMUs shall communicate with PDC at the Control center over		
	the communication link provided by the Employer. For this, PMU		
	shall be provided with two Ethernet ports of 10/100 Base Tx for		
	streaming the data in UDP/IP multicast in IEEE C37.118 format.		
	• The PMU output shall be in the latest version of C37.118.2-2011		
	format and shall communicate with the PDCs in the same format		
	• The supplied PMUs shall be suitable to operate on unearthed 220		
	V DC or 110V DC or 48V DC (+10%, -15%) power supply as available		
	in the substation		
	PMUs shall be provided to measure Voltage and Current Phasors		
	of feeders and transformers. PMU shall also measure the status of		
	master protection and circuit breakers for units, feeders and transformers as per SLD through DI.		
	Analog Inputs (Voltage & Current)		
	O Voltage Phasors: 4 Inputs through type connectors, 57.7V		
	to 138.6V AC (L-N), 40-70Hz with a maximum burden of		
	0.5VA and sampling frequency of up to 19200		
	samples/Sec. Guaranteed Hardware Accuracy should be		
	±0.1% or less.		
	<ul> <li>Necessary Step-Down Transformer / PT along with</li> </ul>		
	connecting leads & crocodile clamps should be provided		
	along with the PMU to accommodate 230V AC (L-N) input		
	into the PMU.		
	o Current phasors: 4 Inputs through Phoenix PC-6 type		
	connectors, rated current of 1A or 5A AC (Max. Current		
	20A Continuous, 42A for 100 sec & 160A for 10 sec), 40-70Hz, with a maximum burden of 0.01VA @1A, 0.1VA		
	@5A and 4VA @42A, sampling frequency of up to 19200		
	samples/Sec. Guaranteed Hardware Accuracy should be		
	±1% or less in the rated current.		

 4 Nos of 20/5A or 30/5A Split core CT with connecting cables should be supplied along with the PMU enabling

The synchrophasor measurement should conform to IEEE C37.118.2-2011 as amended by IEEE C37.118.1a-2014 and IEEE "Synchrophasor Measurement Test Suite Specification" Version 2-

direct input of higher current to PMU

2015.

- The PMUs shall be able to measure/calculate the following with a guaranteed accuracy of better than C37.118 requirements (±0.005Hz, ±0.01Hz or ±0.025Hz as per the C37.118 test):
  - Voltage: VA, VB, VC (3 wire WYE) and VN
  - Current: IA, IB, IC and INPositive Sequence: V1, I1
  - o RMS calculated values Dataset (Analog Values)
  - o Frequency: 32 to 68Hz (50Hz) and 42 to 78Hz (60Hz)
  - ROCOF (Rate of Change of Frequency)
- The PMU shall be able to report the following data in C37.118 stream with Sample Timestamp and Time quality implicitly included in all C37.118 data frames
  - Voltage & Current Phasors
  - RMS calculated values dataset (analog values)
  - o Frequency & ROCOF
  - O Digital Inputs & High current digital Outputs
- The PMU shall be able to perform synchro-phasor reporting for minimum 2 clients over TCP and/or 2 UDP group clients for multicast or unicast
- The PMU shall support data 'Reporting Rates' of 1, 2, 5, 10, 25, 50, 100, 200 for 50Hz signal & 1, 2, 4, 5, 10, 12, 15, 20, 30, 60, 120, 240 for 60Hz signal. The actual rate to be used shall be user selectable.
- The sampled value reporting message format (optional) should be compliant to IEC 61850-9-2LE & IEC 61869-9. Two data streams can be published simultaneously - no matter whatever be the data format.
- The PMU should integrate the MODBUS slave protocol over either a serial link RS232-RS485 (MODBUS-RTU) or TCP/IP Link (MODBUS-TCP)
- The PMU shall receive time from reliable and accurate Global Positioning System through inbuilt GPS receiver. GPS shall provide time traceable to coordinated universal time with sufficient accuracy.
- The PMU should act as a precision time synchronization server to synchronize other devices, IEDs and controllers
- The PMU with supplied GPS shall keep the total vector error (TVE), the frequency error (FE), and the Rate of Change of Frequency (ROCOF) within the limits specified as per IEEE C37.118.1-2011, IEEE C37.118.1a-2014
- The PMU shall have an internal clock, which shall be synchronized with the GPS clock. Upon loss of signal from the GPS source, the PMU shall detect a loss-of-signal and generate an alarm.
- The PMU should able to communicate on IEC 61850 GOOSE messaging publisher as well as subscriber and act as IEC 61850 MMS Server
- The PMU should have 10 Nos of Digital Inputs through Phoenix MSTB type connector (Max Burden 2mA to 5mA, Max hardware response time 0.1mS at nominal voltage)
- The PMU should have 6 Nos of CB Control Outputs through Phoenix MSTB type connectors (Rated Voltage 10-280V DC, Rated Current 5A DC Continuous, 22A DC for 1 Sec, Max Breaking Current 7A @ L/R = 40mS, Switching Frequency up to 20Hz {with 100kΩ

load} / up to 250Hz {with current load >1A})

- The PMU should have 4 Nos of Relay / Alarm Outputs through MSTB type connectors to send alarm to other IEDs / RTUs / Annunciators (Rated current 3A @250V AC / 2A @250V DC, Contact Breaking capacity 10A @250V AC, 8A @30V DC / 0.5A @125V DC / 0.3A @ 250V DC)
- The PMU should be Linux based with a minimum memory of 512MB or more
- The processor should be minimum 32 bit & 800MHz multi core high performance one
- The PMU should be equipped with various LEDs viz., In Service, Alarm (2 Nos), Communication Status (3 Nos), Time Sync, System Status, CB Position, Power etc.
- The PMU should meet the technical requirements of IEC 60255-5,
   IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-5, IEC 61010-1, CISPR 11, CISPR 22 & FCC.
- PMU should be supplied with relevant software facility for analysis purpose
- PMU should be supplied with Power Module
- PMU should be supplied with GPS facility. In case in-built GPS facility is not available then external GPS should be provided.

NB: Drawing/ Design is enclosed herewith.

0 0				
We confirm with our acceptance to the technical specification as given above.				
Date:	BIDDER'S NAME & SIGNATURE			
	WITH SEAL			

					A	NNEXURE- II	
	FORMA	T FOR SUBM	IITTIO	N OF BID I	PRICE		
To,	<u>.</u>						
The	Director						
MAN	MANIT- Bhopal- 462 003						
	•						
Sub:	Tender Document of	dated 00/00/202	24.				
SN	Product Description	Discounted	Qty	Qty	GST	Total Price	
	with make & Model	unit price		Price			
1	2	3	4	5	6	7(5+6)	
	<b>Phasor Measurement</b>		01				
1	Unit		No.				
1							
				Total of	ffered Price		
Tota	l (In Words):						
Deliv	very Period required:						
The	followings things are con						
a	The price quoted ab						
	_	•	rges (Insurance, Loading/ unloading, Packing &				
	Forwarding charges, In		at site.				
b	Taxes are subject to cha						
c	We agree with the terr						
	selected, the executio	n of supplies	would	be made a	as per bill	of Quantity &	
	Specification.						
Date	:			Sig	•	uthorized Bidder	
					with prop	er rubber stamp	
		Name:					
		Designation:					
		Mobile No:					
		1					