## NOTICE INVITING GLOBAL TENDER

Supply and installation of DLP Light Engine



Instrumentation and Applied Physics, Indian Institute of Science, Bangalore

> FEBRUARY 22, 2022 LANSPE, IAP Bangalore 560012

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This is an invited global tender

# Section 1 - Bid Schedule

1	TenderNo			
2	Tender Date	22.02.2022		
3	Item Description	Supply and Installation of DLP light Engine		
4	TenderType	Two bid system		
		(i) Technical Bid (Part A)		
		(ii) Commercial Bid (Part B)		
5	Place of tender submission	Chairperson Office		
		Ground Floor		
		Instrumentation and Applied Physics		
		Indian Institute of Science, Bangalore 560012		
6	Last Date & Time for submission of	16.03.2022		
	tender			
7	For further clarification	Dr. Tapajyoti Das Gupta		
		Room No: 126		
		Instrumentation and Applied Phyics		
		Indian Institute of Science, Bangalore 560012		
		Email: tapajyoti@iisc.ac.in		
		Phone:+91-80-2293-2349		

# Section 2 – Eligibility Criteria

Prequalification criteria:

- 1. The bidder must have supplied similar systems to at least 10 educational institutes/universities and/or research organizations and at least five to the CFTI'sin India along with contact details.
- 2. The Bidder should belong to either class 1 or class 2 supplier distinguished by their "local content" as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter (Refer in details to the annexure).
  - a) Class 1 supplier: Goods and services should have local content of equal to or more than 50%.
  - b) Class 2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%.
- 3. Purchase preference as defined by the recent edits to GFR (within the "margin of purchase preference") will be given to Class-1 supplier.
- 4. MSME can seek exemption to some qualification criteria. IISc follows GFR2017 for such details
- 5. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per -Annexure 4.
- 6. The Bidder must not be blacklisted/banned/suspended or have a record of any service related dispute with any organization in India or elsewhere. A declaration to this effect has to be given as per Annexure 3.
- 7. Original Invoice, Original Warranty Certificate, Original Test Reports should be produced for all imported items from OEM (Original Equipment Manufacturer) at the time of supply of the equipments.
- 8. System Catalogueshould be produced with the Technical Bid.
- 9. Manufacturer should have ISO or equivalent international standard certificate. Please attach the required certificate with the bid.
- 10. Supplier will support the user with all the spares for a minimum period of 5years.
- 11. Details of experienced service engineer including contact detail should be provided in tender document.
- 12. Bidder shall have to submit audited accounts (Balance sheet profit and loss account) of financial year 2015-16, 2016-17 and 2017-18. Audited statement must be signed and stamped by qualified chartered accounted.
- 13. Bidder must submit Income Tax return for assessment year 2016-17, 2017-18 and 2018-19.
- 14. Bidder must submit up to date sales tax or GST clearance certificate.
- 15. CE Certification must be provided for the proposed system. The CE certificate should be provided with the Unit.
- 16. The Bidder should have supplied similar equipment in Central Unversities preferably in centrally Funded Technical Institutes (IITs, IISC, IISER, NIT). Please provide the details and contact informations.

# Section 3 – Terms and Conditions

## A) Submission of Tender:

- 1. All documentations in the tender should be in English.
- 2. Tender should be submitted in two envelops (two bid system).
  - a. Technical Bid (Part-A) Technical bid consisting of all technical details and check list for conformance to technical specifications.

The technical proposal should contain a technical compliance table with 5 columns.

i. The first column must list the technical requirements, in the order that they are given in the technical requirement below.

ii. The second column should provide specifications of the instrument against the requirement. Please provide quantitative responses wherever possible.iii. The third column should describe your compliance with a "Yes" or "No"

only. Ensure that the entries in column 2 and column 3 are consistent. iv. The fourth column should state the reasons/explanations/context for deviations, if any.

v. The fifth column can contain additional remarks from the OEM. You can use this opportunity to highlight technical features, qualify response of previous columns, or provide additional details.

- b. Commercial Bid (Part-B) Indicating item wise price for the items mentioned in the technical bid, as per the format of quotation provided in tender, and other commercial terms and conditions.
- 3. The technical bid and price bid should each be placed in sparate sealed covers, superscripting on both the envelopes the tender no. and the due date. Both these sealed covers are to be placed in a bigger cover which should also be sealed and duly superscripted with the Tender No, Tender Description & Due Date.
- 4. The SEALED COVER superscripting tender number / due date & should reachChair person Office, Instrumentation and Applied Physics, Indian Institute of Science, Bangalore – 560012, India on or before due date mentioned in the tender notice. In case due date happens to be holiday the tender will be accepted and opened on the next working day. If the quotation cover is not sealed, it will be rejected.
- 5. All queries are to be addressed to the person identified in "Section 1 Bid Schedule" of the tender notice.
- 6. The items are required for research purposes, and IISc is a DSIR registered institution, hence eligible for GST exemption (i.e. GST @ 5%). While submitting the price quote, this point must be taken care. For getting GST exemption certificate, successful bidders must submit, a formal request together with Invoice copy and Purchase order copy.

- 7. If price is not quoted in Commercial Bid as per the format provided in tender document thebid is liable to be rejected.
- 8. The Institute reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the award of contract, without there by incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders.
- 9. Incomplete bids will be summarily rejected.

## B) Cancellation of Tender:

Notwithstanding anything specified in this tender document, IISc Bangalore, in itssole discretion, unconditionally and without having to assign any reason, reserves the rights:

- a. To accept OR reject lowest tender or any other tender or all the tenders.
- b. To accept any tender in full or in part.
- c. To reject the tender, offer not confirming to the tender terms.

## C) Validity of the Offer:

The offer shall be valid atleast 90 Days from the date of opening of the commercial bid.

## D) Evaluation of Offer:

- 1. The technical bid (Part A) will be opened first and evaluated.
- 2. Bidders meeting the required eligibility criteria as stated in Section 2 of this documentshall only be considered for Commercial Bid (Part B) opening. Further, agencies not furnishing the documentary evidence as required will not be considered.
- 3. Pre- qualification of the bidders shall not imply final acceptance of the Commercial Bid. The agency may be rejected at any point during technicalevaluation or during commercial evaluation. The decision in regard to acceptance and / or rejection of any offer in part or full shall be the solediscretion of IISc Bangalore, and decision in this regard shall be binding on the bidders.
- 4. The award of contract will be subject to acceptance of the terms and conditions stated in this tender.
- 5. Any offer which deviates from the vital conditions (as illustrated below) of the tender is liable to be rejected:
  - a. Non-submission of complete offers.
  - b. Receipt of bids after due date and time and or by email / fax (unless specified otherwise).

- c. Receipt of bids in open conditions.
- 6. In case any BIDDER is silent on any clauses mentioned in these tender documents, IISc Bangalore shall consider that the BIDDER had accepted the clauses as of the tender and no further claim will be entertained.
- 7. No revision in the terms and conditions quoted in the offer will be entertained after the last date and time fixed for receipt of tenders.
- 8. Lowest bid will be calculated based on the total price of all items tendered for Basic equipment along with accessories selected for installation, operation, preprocessing and post processing, optional items, recommended spares, warranty, annual maintenance contract.

### E) Pre-requisites:

The bidder will provide the prerequisite installation requirement of the equipmentalong with the technical bid.

## F) Warranty:

The complete system is to be under warranty period of minimum 3 years (yearwise breakup value should be shown in the commercial bid) including freesupply of consumables, spare parts and data analysis software from the dateof functional installation. If the instrument is found to be defective, it has to bereplaced or rectified at the cost of the bidder within 30 days from the date of receipt of written communications from IISc, Bangalore. If there is any delay inreplacement or rectification, the warranty period should be correspondingly extended.

### G) Annual Maintenance Contract:

An annual maintenance contract for a period of atleast 3 years post warranty should beprovided on completion of warranty period. The AMC costs will not be considered towards classifying the domestic nature (class 1 or class 2) of the vendor (see eligibility criteria in section 2). In the bid AMC charge should also be provided.

### H) Purchase Order:

- 1. The order will be placed on the bidder whose bid is accepted by IISc based on the terms & conditions mentioned in the tender document.
- 2. The quantity of the items in tender is only indicative. IISc, Bangalore reserves the right to increase /decrease the quantity of the items depending on the requirement.
- 3. If the quality of the product and service provided is not found satisfactory, IISc, Bangalore reserves the right to cancel or amend the contract.

## I) Delivery, Installation and Training:

The bidder shall provide the lead time to delivery, installation and made functionalat IISc, Bangalore from the date of receipt of purchase order. The systemshould be delivered, installed and made functional **within 180 days** from the date of receipt of purchase order. The instalaltion and delivery date must be clearly mentionned in the document. The date can be further modfied depending on mutual discussion. The supply of the items will be considered as effected only on satisfactory installation and inspection of the system and inspection of all the items and features/capabilities tested by the IISc, Bangalore. After successful installation and inspection, the date of taking over of entire system by the IISc, Bangalore shall be taken as the start of thewarranty period. No partial shipment is allowed.

The bidder should also arrange for technical training to the local facility technologists and users.

## J) Payment Terms:

The payment will be through a Letter of Credit and milestone of the payment will be determined after the mutual discussions with the successful bidder. AMC cost (if ordered), after completion of warranty period) will be released on half-yearly basis at the end of each six months subject to satisfactory services. The AMC will be comprehensive. Price basis must be on FOR-IISc Bangalore basis only. As per GFR no advance payment can be made to domestic vendors, unless an equal amount of bank guarentee is provided.

## K) Statutory Variation:

Any statutory increase in the taxes and duties subsequent to bidder's offer, if ittakes place within the original contractual delivery date, will be borne by IISc, Bangalore subject to the claim being supported by documentary evidence. However, if any decrease takes place the advantage will have to be passed onto IISc, Bangalore.

## L) Disputes and Jurisdiction:

Any legal disputes arising out of any breach of contract pertaining to this tendershall be settled in the court of competent jurisdiction located within the city of Bangalore, India.

### M) General:

- 1. All amendments, time extension, clarifications etc., within the period of submission of the tender will be communicated electronically. No extension in the bid due date/time shall be considered on account of delay in receiptof any document(s) by mail.
- 2. The bidder may furnish any additional information, which is necessary toestablish capabilities to successfully complete the envisaged work. It ishowever, advised not to furnish superfluous information.
- 3. The bidder may visit the installation site before submission of tender, withprior intimation.
- 4. Any information furnished by the bidder found to be incorrect, eitherimmediately or at a later date, would render the bidder liable to be barred from tendering/taking up of work in IISc, Bangalore.

# Section 4 – Technical Specifications

## A. Technical Specifications of the light engine and accessories

Sr.	Description	Unit	Specifications	Essential/Non-
				essential
	IISc requires light engine module with WQXGA (2560x 1600) pixel resolution based on TI's DLP9000 advanced light control chipset for generic light exposure and resin-curing applications such as, stereolithog- raphy (SLA) 3D-printing or maskless lithography. Both optical illumination and projection system should be optimized for high intensity light emission at 365nm( wavelength may be specified). The light engine should contain an optional, internal light intensity measurement module to continuously monitor irradiance and provide feedback for intensity reducing effects, such as, light-source ageing compensation. The DLP light engine should be based upon on-axis illumination system using a Total Internal Reflection (TIR) / Reverse TIR (RTIR) prism system to enable low-distortion, highly uniform light distribution across the projection area as required for high- accuracy, industrial light exposure applications. Even DLP9000 is not FPGA programable there is still the possibility to make "kind of scrolling" by sending Video to the chip. This can be done by switching to the VideoPattern Mode: you	1		
	just need to synchronise exactly the video and the movement of the engine.			
1	Digital Light Processing (DLP) with digital micro mirror (DMD) chip having Wide Quad Extended Graphics Array (WQXGA) pixel resolution with following main specifications: Illumination wavelength range (nm) 365- 700 nm ( the wavelenght should be	Chip model number	TI 9000 or better: Details of the chip	Essential

	mentionned, preferably around 360 nm: if it is not feasible the bidder should provide the feasibility range of wavelengths with proper documentations). Micromirror array size : 2560x1600 Pattern rate, binary (Max): 9500 Hz Pixel data rate (Max): 39 Gbps Micromirror pitch: 7.6 µm Display resolution (Max) WQXGA Pattern rate, 8- bit (Max): 247 Hz		should be provided with proper justification in the technical bid	
2	Resolution	Pixel	2560x1600 (proper document must be provided)	Essential
3	Overall spatial resolution on image plane Optics module	nm	100 nm (proper document must be provided to support the resolution. If light engine cannot provide a 100 nm resolution a minimum of 300 nm is essential)	Essential
4	projection area	mm	0.195 x 0.122	Essential
5	Minimum Intensity Uniformity (IEC Def.)	%	better than 70	Essential
6	ANSI Contrast	Number ratio	50:1	Essential
7	Full / ON contrast	Number ratio	100:1	Essential
				Essential
8	Contrast Transfer Function (CTF)	%	30 minimum	Facartial
9	LED/laser Light source module wavelength. LASER sorce should be easly replaced by the user.	nm	365 nm ideally: if not feasible wavelength range should not exceed 405 nm	Essential
10	Optical output power in image plane (Adjustable by intensity or current value)	mW/cm <sup>2</sup>	Better than 1000	Essential

11	intensity measurement module should be included			Essential
12	Depth of focus	nm	300	Essential
13	Image Distortion	%	less than 5%	Essential
14	Image stiching and Scrolling	/0		Essential
15	Eletronic Hardware requirements			
	it is expected that the light engine, including led source, DMD data input, light engine sensors and cooling devices would be available for control and monitoring though usb port as well as GPIO.			Essential
	(i) should have Display Port input (DP standard 1.1a)			Essential
	(ii) should have USB Type B (plug)		USB Transaction Sequence should be provided for input data, outputdata, LED control and dmd control	Essential
	(iii) should have 24V Input supply (or as required for internal electronics)			Essential
	(iv) should have Trigger Signal Connector /General Purpose Input/Output(GPIO) with the following capablity			Essential
	(a) The GPIO can be configured as input or output of the DLP controller			Essential
	(b) GPIO should have DLP controller Trigger 1 input			Essential
	(c) GPIO should have DLP controller Trigger 2 input			Essential
	(d) GPIO should have DLP controller Trigger 1 output			Essential
	(e) GPIO should have DLP controller Trigger 2 output			Essential
	(f) GPIO Should have LED Status pin High" if LED is currently ON, "low" if LED is OFF.			Essential
	(g) GPIO Should Trigger the light exposure timer as set via API/software command (falling or rising edge).			Essential
	(h) GPIO Should have led enable disable pin			Essential
	(i) GPIO Should have 3.3V output pin			Essential
				Essential
16	Liquid Cooling Module			Essential
	Should include in and out connectors for external liquid cooling			Essential

17	Software		
	Light engine should have User interface		Essential
	software and should also provide and		
	API for the following paramaters		
	(a) internal initialization	 Yes or no	Essential
	(b) LED Temprature	 feedback check within acceptable range	Essential
	(c) DMD board Temprature	 feedback check within acceptable range	Essential
	(d) Hardware initialization and version	 Yes or no	Essential
			Essential
	(e) intensity measurement module installation and calibration	 Yes or no	Essential
	(f) write protection	 Yes or no	Essential
	(g) Intensity module installed	 Yes or no	Essential
	(h) PCB FAN SPEED	 dispaly the real time value	Essential
	(i) DMD FAN SPEED	 dispaly the real time value	Essential
	(j) LED FAN SPEED	 dispaly the real time value	Essential
	(k) BOARD temprature	 dispaly the real time value	Essential
	(I) DMD Temprature	 dispaly the real time value	Essential
	(m) LED Temprature	 dispaly the real time value	Essential
	(n) LED voltage (V)	 dispaly the real time value	Essential
	(o) LED current (mA)	 dispaly the real time value and setting of the value	Essential
	(p) Intensity regulation, watts (uw/cm2),	 dispaly the real time value and setting of the value	Essential
	(q) Intensity μw/cm²)	 display the real time value and setting of the value	Essential
	(r) LED timer (Set on time)	 setting of the value or disable	Essential
	(s) Selection of hardware and software trigger	 Trigger selection	Essential

	(t) Intesity offset gain		dispaly the real time value	Essential
	(u) Intensity gain		dispaly the real time value	Essential
	(v) Selection of operating mode (Video mode / pattern mode / Video pattern mode / pattern on the fly mode)		Mode selection should also have various parameters settings	Essential
	(x) Software trigger or hardware trigger		setting of the value	Essential
18	Other conditions			Essential
	Our Input power supply		230V-240V 50HZ single phase	Essential
19	Microscope objective ( can be changed by the user in a easy way)	details of the objective should be provided with the bid		Essential
19	Warranty conditions		3 years from the date of acceptance with AMC charges	Essential

• Any deviation from not providing proper documentation is subject to rejection as per IISc choice for non compliance.

### B. Training and demonstration

- Complete installation of the Light engine needs to be provided
- Training for users by the company personnel present 'on site' immediately after the installation.
- All pre-installation requirements to have the system installed in ideal room conditions should be included in the quote.
- IISc may opt for onsite visit before acceptance of the light engine. A separate quote must be provided which will include the travel expenses.

### C. Others

- The system with similar specifications must submit references from previous installations.
- The names and contact addresses of the referees must be submitted with the proposal, so the purchase committee can contact them independently.
- The system should require minimal maintenance.
- Mention the recommended preventive maintenance schedule for the system. Any accessories needed for periodic preventive maintenance for 3 years, should be mentioned in separately the itemized quote.
- Factory Inspection and testing: IISc may opt for factory inspection and testing. In order to cover such possibility, a separate quote for inspection and training for one persons at factory site, including travel a nd stay, should be provided by the supplier

- Can the preventive maintenance be done by a trained on-site engineer or requires a specialist from the OEM? If the latter, please provide cost of a 3 year AMC with required kit/consumables.
- CE Certification must be provided for the proposed system. The CE certificate should be provided with the Unit.
- Operation Manual to be given after installation and acceptance of equipment
- The system should be supported by a trained local representative and should have a minimum of 72 hour window of response.

# Section 5- Technical Bid

The technical bid should furnish all requirements of the tender along with all annexures in this section and submitted to

The Chairperson, Attn: Dr. Tapajyoti Das Gupta Instrumentation and Applied Physics, Indian Institute of Science Bangalore – 560012, India

## Annexure-1:

Details of the Bidder The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

### **Details of the Bidder**

Sl. No	Items	Details
1.	Name of the Bidder	
2.	Nature of Bidder (Attach attested copy of	
	Certificate of Incorporation/Partnership	
	Deed)	
3.	Registration No/ Trade License, (attach	
	attested copy)	
4.	Registered Office Address	
5.	Address for communication	
6.	Contact person-Name and Designation	
7.	Telephone No	
8.	Email ID	
9.	Website	
10.	PAN No. (attach copy)	
11.	GSTNo. (attach copy)	

Signature of the Bidder

Name Designation, Seal

Date:

## Annexure-2:

Declaration regarding experience

To, The Chairperson, Instrumentation and Applied Physics, Indian Institute of Science Bangalore – 560012, India

Ref: Tender No: XXXXXXXXX Dated: XXXXX

Supply and installation of DLP Light Engine at Laboratory of Advanced Nanostructures for Photonics and Electronics (LANSPE), IAP IISC Bangalore

Sir,

I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company / firm has ---- years of experience in supplying and installing Confocal systems.

(Signature of the Bidder) Printed Name Designation, Seal Date:

## Annexure-3:

Declaration regarding track record

To, The Chairperson, Instrumentation and Applied Physics, Indian Institute of Science Bangalore – 560012, India

Ref: Tender No: XXXXXXX Dated: XXXXX

Supply and installation of DLP Light Engine at Laboratory of Advanced Nanostructures for Photonics and Electronics (LANSPE), IAP IISC Bangalore

Sir,

I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company/firm is not currently debarred/blacklisted by any Government/Semi Government organizations / institutions in India or abroad. I further certify that I'm competent officer in my company / firm to make this declaration.

Or

I declare the following

Sl.No	Country in which the	Blacklisted / debarred by	Reason	Since when and
	company is Debarred	Government / Semi		for how long
	/blacklisted / case is	Government/Organizations		
	Pending	/Institutions		

(NOTE: In case the company / firm was blacklisted previously, please provide the details regarding period for which the company / firm was blacklisted and the reason/s for the same).

Yours faithfully (Signature of the Bidder)

Name Designation, Seal

Date:

## Annexure – 4:

Declaration for acceptance of terms and conditions

To, The Chairperson, Instrumentation and Applied Physics, Indian Institute of Science Bangalore – 560012, India

Ref: Tender No: XXXXXX Dated: XXXX

Supply and installation of DLP Light Engine at Laboratory of Advanced Nanostructures for Photonics and Electronics (LANSPE), IAP IISC Bangalore

Sir,

I've carefully gone through the Terms & Conditions as mentioned in the above referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I'm an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder) Name Designation, Seal

Date:

## Annexure – 5:

Details of items quoted:

- a. Company Name
- b. Product Name
- c. Part / Catalogue number
- d. Product description / main features
- e. Detailed technical specifications
- f. Remarks

Instructions to bidders:

- 1. Bidder should provide technical specifications of the quoted product/s in detail.
- 2. Bidder should attach product brochures along with technical bid.
- 3. Bidders should clearly indicate compliance or non-compliance of the technical specifications provided in the tender document.

# Section 6 – Commercial Bid

## The commercial bid should be furnished with all requirements of the tender with supporting documents as mentioned under:

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total
1.	Essential items noted in the				
	technical specification				
1.a	(details of essential				
	items)				
1.b					
2.	Optional items noted in the				
	technical specification				
2.a	(details of essential				
	items)				
2.b					
3.	Accessories for operation				
	and installation				
4.	All Consumables, spares				
	and software to be				
	supplied locally				
5.	Warranty (1 year)				
6.	AMC2 years beyond				
	warranty				
7.	Cost of Insurance and				
	Airfreight				
8.	CIP/CIF IISc, Bengaluru				

#### Any additional items

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total

#### Addressed to

The Chairperson, Attn: Dr. Tapajyoti Das Gupta Instrumentation and Applied Physics, Indian Institute of Science Bangalore – 560012, India

# Section 7 – Checklist

(This should be enclosed with technical bid- Part A) The following items must be checked before the Bid is submitted:

## 1. Sealed Envelope "A": Technical Bid

- 1. Section 5- Technical Bid (each page signed by the authorized signatory and sealed) with the below annexures:
  - a. Annexure 1: Bidders details
  - b. Annexure 2: Declaration regarding experience
  - c. Annexure 3: Declaration regarding clean track record
  - d. Annexure 4: Declaration for acceptance of terms and conditions
  - e. Annexure 5: Details of items quoted
- 2. Copy of this tender document duly signed by the authorized signatory on every page and sealed.

## 2. Sealed Envelop "B": Commercial Bid

Section 6: Commercial Bid

Your quotation must be submitted in two envelopes: Technical Bid (Envelope A) and Commercial Bid (Envelope B) super scribing on both the envelopes with Tender No. and due date and both of these in sealed covers and put in a bigger cover which should also be sealed and duly super scribed with Tender No., Tender description & Due Date.