



भारत सरकार/ GOVERNMENT OF INDIA
अंतरिक्ष विभाग/ DEPARTMENT OF SPACE
भारतीय अंतरिक्ष विज्ञान एवं प्रौद्योगिकी संस्थान/INDIAN INSTITUTE OF SPACE SCIENCE & TECHNOLOGY
क्रय एवं भंडार विभाग / PURCHASE & STORES DEPARTMENT
वलियमला पीओ., तिरुवनंतपुरम 695 547/ VALIAMALA P.O, THIRUVANANTHAPURAM 695 547,
केरल, भारत/ KERALA, INDIA
Ph No.:0471-2568451/ Tele Fax:0471-2568406/ e-mail : pso@iist.ac.in

निविदा आमंत्रण / INVITATION TO TENDER

Date : 24.08.2016

Tender Due on: **06.10.2016 at 14.00 Hrs**
Tender opening on: **07.10.2016 at 10.30 Hrs**

Dear Sirs,

Separate Sealed TWO PART tenders are invited from accredited manufacturers / suppliers / agents for the supply of the following equipments:

Sl. No.	Tender No.	Item Description	Qty/ Nos.	Cost of Tender (Rs.)
1.	IIST/PUR/3058/16	HYPERSPECTRAL IMAGING SPECTRORADIOMETER Specifications : A. Instrument Parameters 1. Spatial resolution: Number of spatial pixels - 1000 or more (if the weight of the instrument is one kilogram or less, spatial pixels up to 600 would also be considered). Documentation required: Documentation of the actual spatial point spread functions for the system. The documentation should be provided for several field points spanning the whole field of view and should cover the full spectral range for each field point. 2. Spectral range and spectral resolution: 400 – 1000nm and FWHM of 5nm or narrow. Documentation required: Graphs showing the actual spectral resolution across the whole field of view. This documentation should be provided for several wavelengths spanning the spectral range of the system. 3. Spectral misregistration (smile effect): 0.5 pixel or finer 4. Spatial misregistration (keystone effect): 0.5 pixel or finer	1 No.	500+VAT @5% (525/-)

		<p>5. Optics: Fore-optics: two objective lenses as mandatory supply (focal length: one lens of focal length between 15 to 23mm and the other lens of focal length between 4 to 6 mm). If the instrument has more than 1800 spatial pixels, and pixel size is 6 micron or finer and frame rate (full frame) of 200 or higher, fore objective with FOV of 36 deg or wider would be also considered in lieu of the two a aforementioned two lenses. Internal optics: slit of length between 14 to 20 mm, and width between 20 to 30 μm.</p> <p>6. Order filters: order filters should be included in the standard supply if the instrument dispersion element design supports.</p> <p>7. Acquisition speed, integration time, readout mode: Frame rate of at least 85 or higher (without binning in any direction and at full frame resolution). Documentation required: (a) Is the specified frame rate given for the full resolution of the instrument? (b) Can the integration time be adjusted independently of the frame rate? (c) Which sensor architecture is used? Frame transfer CCD, interline CCD, or CMOS?</p> <p>8. Instrument calibration The instrument and the mandatory fore optics lenses should be calibrated and cover (i) spectral calibration (wavelength calibration), and (ii) radiometric calibration. Documentation required: Documentation specifying which calibration data are supplied with the instrument and how the calibration has been performed. The following points needs to be answered. (a) Does the user have access to the calibration data (e.g. responsivity data, dark matrix) and is the physical meaning of the data clearly documented? (b) How is the background (dark) acquisition done? (i.e. automatic or manual?) (c) Is a regular recalibration required? (d) Can the supplier provide recalibration services?</p> <p>9. Data calibration and file formats: The supplier should provide software tools for image data calibration and preprocessing. The file format should be supported by standard remote sensing image analysis software (e.g. ENVI). Documentation required: Documentation of which processing steps are needed to convert the hyperspectral images from raw data to at-sensor radiance calibrated data,</p>		
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		<p>and further on to reflectance data (including the necessary equations, formulae, and values of instrument specific constants and variables).</p> <p>(a) Does the user have access to the raw data from the sensor?</p> <p>(b) Does the user have access to the calibration data?</p> <p>(c) Is the calibration procedure transparent from the end user perspective?</p> <p>(d) Can the raw and calibrated image files be opened directly in standard software packages like ENVI?</p> <p>(e) Does the software allow batch processing?</p> <p>B. Instrument Control and Data Acquisition Unit: A data acquisition and camera control unit (including camera control interface, frame grabber) is required. It would be considered as fulfilling if this unit is supplied by the vendor as a local supply. The standard supply should include the necessary software and interfacing accessories to enable use this.</p> <p>C. Reference Target: White reference panel of size at least 10'x 10' with at least 99% reflectance.</p> <p>D. Software: Software tools to acquire, store & convert spectral data into radiance/reflectance factors. Software tools should be compatible with the OS of the data acquisition unit have to export option to convert image data into other image.</p> <p>E. Power and Connecting Cables: In the lab environment: AC: 220VAC, 50Hz; In the field environment: battery operable. The stand supply to include all the AC/DC adaptors, battery chargers, and spare battery for the instrument, and cables for interfacing with data acquisition unit, and hyperspectral camera.</p> <p>F. Operating Temperature: 5 to 40 Deg C or wide; Weight of the instrument: 3 kg or less</p> <p>G. Installation and training: On-site installation and training (at no cost).</p> <p>H. Optional Items</p> <ol style="list-style-type: none"> Platform and scanning stage: The instrument is intended for operation in outdoors (field data) and in lab environment. The vendor should quote separately for a compatible platform (tripod based with automated rotating stage) for mounting the imaging system in field and lab conditions with all the necessary power supply and cables. Desirable: tiltable rotation stage for operation of the instrument outdoors, and translation stage in lab environment. Fore optics lens of focal length between 35 to 70 deg. 		
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		<p>I. Warranty:</p> <p>One year free warranty with technical support, from the day of acceptance. Extension of warranty for two years after the completion of first year warranty. Services rendered (at IIST, local/Indian agent premises, OEM outside India) during the warranty period must be clearly mentioned. Warranty terms & conditions (including to and fro shipments to outside India if any) for all the three years should be stated clearly.</p>		
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Commercial terms and Conditions Tender No. IIST/PUR/3058/16 dated 24.08.2016

1. General Requirements:

- 1.1 Detailed Catalogue/ Data Sheet of the quoted item.
- 1.2 Clientele List
- 1.3 Performance Letter from the Clients.

2. SPECIAL INSTRUCTIONS TO TENDERERS

- 2.1 **The bidder is required to submit quotation for the entire scope in *TWO PART* viz, Technical and commercial bid and price bid separately. The first cover shall contain the technical and commercial details along with the format of price quotation without the price superscribing in the cover “*Technical and Commercial-Tender No. IIST/PUR/3058/16 Due on 06.10.2016*. The second cover shall contain the prices superscribing in the cover price bid- Tender No. *IIST/PUR/3058/16 Due on 06.10.2016*. All the covers to be sealed and insert in another cover super scribing the Tender No. *IIST/PUR/3058/16 Due on 06.10.2016* and submit immediately but not later than the due date mentioned against each tender. If the tender is received after the due date and time, the same shall be summarily rejected.**
- 2.2 The cost of tender stated against each tender shall be submitted ***along with Technical & Commercial bid by Demand Draft*** drawn in favour of the sr. Accounts Officer, IIST and payable at State Bank of India, Valiamala Trivandrum-695 547. ***In case the Demand Draft is not enclosed with the quotation, the bid shall be summarily rejected.***
- 2.3 **Test certificate:** Wherever required, test certificates should be essential.
- 2.4 **Payment:** Our normal payment term shall be sight draft for imports by e-transfer and within 30 days after supply/installation and acceptance for indigenous.
- 2.5 The installation and commissioning of equipment to be done at our campus, Valiamala, Thiruvananthapuram-695 547. All pre-requisites such as foundation drawing, grouting and any consumables needed for carrying out the installation, if applicable, shall be separately mentioned in the technical bid.
- 2.6 Delivery terms shall be Ex-works/FOB/FCA for imports and FOR, Valiamala for indigenous.
- 2.7 For import cargoes, the purchase order shall be drawn directly to the foreign supplier through agents in India. We have our own freight forwarder and customs clearance at Trivandrum shall be done by us.

- 2.8 All duties and taxes, if applicable shall be quoted separately.
- 2.10 Accreditation documents such as current income tax/sales tax clearance certificate, clientele list with previous experience in the similar lines of supply must be provided with documentary evidence), Performance Certificate, authorization for import, after sales support in India etc. shall be explained in detail with proof.
- 2.11 **Guarantee & Replacement:**
- a) The contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down, for material, workmanship and performance.
 - b) For a period of twelve (12) months after the acceptance of the stores, if any defects are discovered therein or any defects therein found to have developed under proper use, arising from faulty stores design or workmanship, contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months from the date of acceptance thereof by the Purchaser who shall state in writing in what respect the stores or any part thereof are faulty.
- 2.12 **Earnest Money Deposit (EMD):-** Interest free EMD to ensure the earnestness of the vendor in the participation of the procurement process to the tune of **Rs.62,000/- (Rs. Sixty two thousand only)** by Demand Draft drawn in favour of the Sr. Accounts Officer, IIST, Valiamala, Trivandrum may be enclosed with Technical & Commercial bid sealed cover. The EMD will be refunded to the unsuccessful tenderers within 30 days after placement of Purchase Order. The tender not accompanied with EMD shall be treated as invalid tender and summarily rejected. Foreign vendors (registered vendors or vendors who have already applied for renewal of registration) Central PSUs/PSEs/ Autonomous Bodies, Micro & Small Enterprises, KVIC, National Small Industries Corporation, etc. Shall be exempt from the payment of EMD.
- 2.13 **Security Deposit:-** Interest free Security Deposit @ 10% of the value of Purchase Order shall be payable by successful vendor for satisfactory execution of the Purchase Order.
- 2.14 **Performance Bank Guarantee** equivalent to 10% of order value shall be submitted by the supplier for Warranty obligation after completion of supply.
- 2.15 **Liquidated Damages:** The period of completion indicated shall be the essence of the Purchase order. In the event of delayed date of completion, the liquidated damages @ 0.5% per week or part thereof subject to a maximum of 10% of the contract value shall be recovered.
- 2.16 **Force Majeure:** During the continuance of the contract, should a part or whole of the items covered by this contract be delayed in delivery due to reasons of force majeure condition which shall include lockouts, strikes, riots, civil commotions, fire, flood, windstorm, explosion, labour disturbance, act of any Govt. or any

agency, judicial action, sabotage act of civil disobedience, act of public enemy, technical failure, accidents, acts of God and war, stoppage of deliveries by Govt. etc, each party undertakes to advise the other as soon as it becomes a way of the circumstance of such force majeure, so that action under the provisions of this contract can be mutually reviewed and agreed upon between contractor and IIST. If the force majeure condition extended over a period of six months, both the parties of the contract shall mutually discussed and arrived at an agreement for the continuation/ termination of the contract forthwith.

- 2.17 **Arbitration:** Dispute if any shall be settled mutually, failing which, it will be referred to a one-man arbitrator appointed by Director, IIST in accordance with the Arbitration and Conciliation Act, 1996 and any alteration/modifications thereof, whose decision shall be final and binding on both the parties
- 2.18 **After Sales Service Support:** The stock availability of spares and consumables for a minimum period of 5 years for up keeping the equipment shall be guaranteed to avoid obsolescence of systems.
- 2.19 **AMC:** The charges towards Annual Maintenance Contract (Comprehensive/Non- Comprehensive) beyond the normal warranty period may be quoted separately as option.
- 2.20 IIST reserves the right to either accept/reject any tender/s without assigning any reason/s whatsoever.
- 2.21 **Separate quotations shall be submitted for each tender along with the tender fee by demand draft.**
3. **Terms & Conditions of Tender Form No. DOS PM:20, Form No. DOS PM:22 & Form No. DOS PM:23 as per attachment.**

Sd/-
(M.B Subash Chandran)
Sr. Purchase & Stores Officer
For and on behalf of Director, IIST