



Tender Notification for procurement of a High-Speed Camera 15-July-2019

(Last date for submission of tenders: 30-July-2019)

The Indian Institute of Science (IISc) solicits price quotations on C.I.P. Bengaluru basis for a high-speed camera that meets the following technical specifications.

Technical specifications and components required for the high-speed camera

1. Monochrome CMOS sensor with an array of at least 1,000,000 pixels (1 megapixels) and a wide-screen format (*e.g.* 16:10 or 16:9 aspect ratio).
2. The CMOS sensor light sensitivity measured as per ISO 12232:2006 method using tungsten light for illumination should be no less than 100,000 (including the IR range).
3. Analog-to-Digital (A/D) conversion of CMOS sensor data with a resolution of no less than 12 bits.
4. Imaging capability with full sensor resolution (atleast 1 megapixels) at no less than 15,000 frames-per-second (FPS).
5. Capability to achieve a frame-rate of 1,000,000 (1 million) FPS at a reduced resolution of no less than 2000 pixels.
6. Capability to achieve a minimum exposure time of no greater than 750 nanoseconds per frame at suitable frame rates.
7. On-board camera storage of no less than 64 GB.
8. Software with functionality to allow for full operation (all features) of the camera.

The following terms and conditions are applicable for this tender.

Terms and conditions

1. This tender follows a two-bid system, seeking separate technical and commercial bids.
2. The offer price in the commercial bid should be on a **C.I.P. Bengaluru** basis and **should include** camera hardware, software, laboratory installation and demonstration at IISc, and a comprehensive warranty period of no less than one year from the date of installation.
3. IISc will issue payment for the product through a Letter-of-Credit (LC).
4. The technical bid should contain the full technical specifications of the camera on offer, along with a product brochure if available.

5. The technical bid should also contain camera warranty details and terms. Further, any periodic maintenance requirements for regular operation of the camera should be specified in detail, along with the extent of overage under warranty for such maintenance activity.
6. The technical bid should also contain terms and conditions for **future purchase** of extended warranty on the camera, should IISc decide to do so. The commercial bid should include a **separate price quotation** for the extended warranty as per terms outlined by the vendor in the technical bid.
7. The vendor should be of international repute and have an office in India that can provide in-person technical support at IISc if needed during the warranty period.
8. The vendor should have supplied no less than ten high-speed cameras in the last five years to Government of India organizations of national importance, including but not limited to CFTIs (IISc/IITs/NITs *etc*), DRDO laboratories, ISRO centers, and CSIR laboratories. **A self-attested list of the same with camera model details, date of sale (month and year), and customer contact information should be provided by the vendor as part of the technical bid.**
9. If required, the vendor should be able to perform a demonstration at IISc of the camera model on offer for technical evaluation.
10. The camera should be delivered and installed at IISc within **12 weeks** from the Letter-of-Credit issue date.
11. The vendor policy on minimizing user interruption due to camera repairs during the warranty period must be clearly specified in the technical bid. For instance, would the vendor be able to provide an alternate camera, which satisfies above technical requirements, on a temporary basis to IISc until repairs and re-installation of the procured camera are completed successfully?

Vendors should strictly adhere to the following instructions in preparing their bids.

Instructions

1. The quotation should clearly indicate the terms of delivery and delivery schedule.
2. The tender should be submitted in **two separate sealed envelopes** – one containing the **technical bid** and the other containing the **commercial bid**, both of which, duly signed, should reach IISc (at the address provided below) before **17:30 hours of 30 July 2019**. Unsealed quotation covers will be rejected. The two sealed envelopes can be sent together inside a single larger envelope.
3. Mailing address:
The Chairman
Department of Aerospace Engineering
(Attention: Dr. Duvvuri Subrahmanyam)
Indian Institute of Science
Bengaluru 560 012, India.
Phone: +91-80-2293-2416/2417

4. A compliance certificate should be enclosed along with the technical bid. This certificate should have a table that describes your compliance in a “Yes” or “No” response against each of the items listed under Technical Specifications above.
5. Items in addition to that listed in the Technical Specifications that vendors would like to bring to the attention of the IISc Technical Committee for this procurement can be listed at the end of the compliance table.
6. The technical bid should also explicitly address compliance and/or acceptance to each of the points listed under Terms and Conditions above, and any information requested therein should be furnished in detail.
7. Vendors offering international cameras (OEM based outside India) should provide the price quotation in suitable foreign currency.
8. In case of an international camera, IISc will provide the end-user certificate and necessary supporting documents for the import of items into India to facilitate necessary Customs Duty exemptions.

Vendors should utilize the following checklist to ensure that their submissions are complete and contain all the required information.

Checklist

1. The technical bid should contain:
 - (a) technical compliance certificate as per items 4 and 5 of the above instructions;
 - (b) full technical specifications of the camera on offer along with any available product brochure as per item 4 of the above terms and conditions;
 - (c) camera warranty details with terms, and any periodic maintenance requirements as per item 5 of the above terms and conditions;
 - (d) extended warranty details with terms as per item 6 of the above terms and conditions;
 - (e) acceptance of all terms and conditions listed above as per item 6 of instructions;
 - (f) a list of high-speed cameras supplied to Government of India organizations as per item 8 of terms and conditions.
2. The commercial bid should contain:
 - (a) a price quotation for the camera on offer as per item 2 of the above terms and conditions;
 - (b) a separate price quotation for extended warranty as per item 6 of the above terms and conditions.

All enquiries and clarification requests should be directed to:

Dr. Duvvuri Subrahmanyam
Assistant Professor
Department of Aerospace Engineering
Indian Institute of Science, Bengaluru 560 012, India
Email: subrahmanyam [at] iisc [dot] ac [dot] in