



Indian Institute of Science (IISc)
Bengaluru – 560012
(www.iisc.ac.in)

NOTICE INVITING TENDER
under the two-cover bid format
for
**Procurement of Chip Tape-Out and Fabrication Services for 180nm CMOS
process nodes to DESE, IISc Bangalore**

Tender No: DESE/LU/AP/26/2024-25

Date: 11/Mar/2025

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I. Introduction

Established in 1909, the Indian Institute of Science (IISc), having its main campus in Bangalore (Karnataka, India), is India's leading institution of advanced education and research in the sciences and engineering. It is a Deemed-to-be- University under Section 3 of the UGC Act, 1956, under the Ministry of Human Resource Development (MHRD), Govt. of India, which has declared IISc as an Institution of Eminence (IOE). From its beginnings, IISc has emphasized fundamental investigations and the solution of practical problems in such a setting.

Quotations should come only from **Indian Original Equipment Manufacturers (OEMs)** or authorized Indian distributors. The quotations should be on FOR-IISc Bangalore basis in INR only.

Detailed technical specifications are mentioned in the subsequent sections. The bids must be submitted in a two-cover bid format.

Schedule of Events

| | |
|---|--|
| Tender Publishing Date | 11/Mar/2025 |
| Pre-Bid clarification end date (by email) (An online Pre-bid clarification meeting may be held if required) Email ID: aruppolley@iisc.ac.in , office.es@iisc.ac.in | 26/Mar/2025 |
| Deadline for submission of bids (before 5.00 PM) | 01/Apr/2025 |
| The bids should be sent to | Dr. Arup Polley, Department of Electronic Systems Engineering, Indian Institute of Science, CV Raman Road, Bengaluru – 560012 Mention the following reference on the cover: Procurement of Chip Tape-Out and Fabrication Services to DESE Ref: DESE/LU/AP/26/2024-25 |
| Opening of technical bids | 03/Apr/2025 |
| Listing of technically qualified bidders | To be declared later |

II. Technical Specification

Procurement of Chip Tape-Out and Fabrication Services

This is a Request For Quote (RFQ) for the **procurement of chip tape-out and fabrication services** on 65nm, 40nm, and 28 nm silicon CMOS process technology nodes for low-power/high-performance/energy-efficient digital/analog/mixed-signal integrated circuit fabrication, as part of a limited tender for the Department of Electronic Systems Engineering (DESE) at the Indian Institute of Science (IISc), Bengaluru 560012, Karnataka, INDIA.

Research groups at DESE, IISc are working on various aspects of electronic systems and aim to demonstrate novel applications using custom integrated circuits fabricated with commercially available silicon CMOS semiconductor technologies. In this context, **we invite tenders from domestic chip tape-out and fabrication service providers** to provide chip tape-out services satisfying the technical parameters specified in the table below.

Bids are invited for the following service:

| | Description | Specifications |
|--|--------------------------------|--|
| 1. | Major Application | Chip Tape-Out and Fabrication Services on Silicon CMOS Processes for Digital/Analog/Mixed-Signal Integrated Circuits |
| Basic Technology Specifications | | |
| 2. | Process | Silicon CMOS |
| 3. | Node | <p>180nm CMOS technology variants, including</p> <ul style="list-style-type: none"> ○ Mixed Signal and RF (MS-RF) technology ○ High-Voltage Bipolar-CMOS-DMOS (BCD) technology |
| 4. | Technology Provider | <ul style="list-style-type: none"> • Taiwan Semiconductor Manufacturing Corporation (TSMC) to ensure backward compatibility to existing designs <p>OR</p> <ul style="list-style-type: none"> • Alternatively, a 100% Indian manufacturer providing a Silicon CMOS technology at all the technology nodes specified above |
| 5. | Additional Requirements | <p>(1) Chips will be required for integrated circuit (IC) design R&D. Limited volumes (100 sample chips per tape-out) are needed, so a multi-project wafer (MPW) shuttle or similar solution is desired. No high-volume fabrication is planned.</p> <p>(2) Total area of IC fabrication will be 48 mm² across various technology nodes as specified above. This area may be split into multiple design blocks (with chip area 1 mm² or more) depending on the specific design and layout requirements. It is subject to the sum of the individual areas being less than or equal to 48 mm².</p> <p>(3) Should offer a minimum of 3 shuttles per year on all the technology nodes as specified above.</p> <p>(4) Must provide full process design kit (PDK) for each of the technology nodes specified above.</p> <p>(5) Must provide standard cell library, pad/IO library, memory</p> |

| | | |
|-----|--|---|
| | | <p>compiler and other design collaterals for each of the technology nodes specified above.</p> <p>(6) Must be able to support technical questions on process, device and circuits for each of the nodes specified above.</p> <p>(7) Must support Cadence, Synopsys, Siemens and Keysight ADS tools for all the technology nodes specified above.</p> <p>(8) Must provide full tape-out support for all the technology nodes specified above. Must run all the pre-tape-out checks after LVS/DRC clean layout is provided for fabrication.</p> <p>(9) Must guarantee match between simulations and silicon data and provide free repeat tape-out in case it is established that fab processing errors led to problems in silicon functionality and/or performance.</p> |
| 6. | Optional Technical Specifications | Chip packaging support should be available on QFN/QFP, flip-chip and/or CSP packages. |
| 7. | Customer Base | Large customer base worldwide and in India. Similar solutions and support should have been provided to other customers. |
| 8. | Warranty & AMC | As per norms. Free repeat tape-out should be guaranteed in case of fab processing issues leading to silicon problems. |
| 9. | Payment Terms | The payment terms should be specified in the commercial proposal and is subject to negotiation. |
| 10. | Support | Please provide details of the number of trained personnel in India, who can provide support in the same time zone +/- 3 hrs. |
| 11. | References | Please provide references from India and/or abroad. |
| 12. | Shipping | The cost of shipping up to IISc Bangalore should be included. IISc Bangalore will help with customs clearance at Bangalore Airport. Please include your payment option. |
| 13. | Training | Vendor to specify if necessary. |

Instructions to bidders:

Part A

- A. The Bidder should belong to either class 1 or class 2 suppliers 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.
 - 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%.
- B. Purchase preference as defined by the recent edits to GFR (within the “margin of purchase preference”) will be given to Class-1 supplier.
- C. MSME can seek exemption to some qualification criteria. IISc follows GFR2017 for such details.

- D. Separate detailed justification needs to be given to substantiate the qualification as Class 1 and Class 2 suppliers and the intender reserves the right to cross-check the factual validity of the same and one if some foreign parts or equipment is being put forward then please submit the “*bill of material*” details for the same for evaluation.

Part B

1. *Two-cover format*

The quotations should be submitted by reputed domestic vendors in a **two-cover format** comprising a technical part and a commercial part. The envelopes should be sealed and marked clearly as “**Envelope No. 1 – Technical Bid**” and “**Envelope No. 2 – Commercial Bid.**” The two sealed envelopes must be put in a bigger cover, which should also be sealed and contain the tender number and due date. The bigger cover should be super-scribed with “**Procurement of Chip Tape-Out and Fabrication Services for security evaluation to DESE. DESE/LU/AP/26/2024-25.**” All covers should bear the **name, complete postal address, and contact (mobile/landline) number of the bidder.** Bids must be submitted in hard copy only. Bids sent by **email will not be accepted.**

2. *Technical bid*

A) The technical bid should contain:

- (i) the name, complete postal address, GSTIN, PAN, and contact details, viz. email ID / Contact (mobile/landline) number of the bidder.
- (ii) the unpriced bill of material with quantities of each line item
- (iii) a datasheet for the product/model suggested. Any deviations from the required specifications must be mentioned explicitly.

B) The technical proposal should be submitted in 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 specifications below.
- (ii) The second column should provide workstation specifications 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 and qualify the response of previous columns.

The technical bid should not contain any price information. Non-compliance will lead to a rejection of the bid at the discretion of the technical evaluation committee.

3. Commercial bid

The commercial bid must include the price of the item in Indian currency, indicating installation and commissioning, warranty and maintenance charges, applicable taxes, GST, and total. The prices must be given for each line item separately. **Bundling of prices is not acceptable and may lead to disqualification of the bid.** Installation and commissioning charges, if any, must be quoted as a separate line item - these will be paid only after successful supply, installation, and acceptance.

4. Warranty terms

- Warranty services for the system supplied by the successful bidder should be valid for a period of three years from the date of successful installation and acceptance of the equipment.
- During the warranty period, the bidder shall be fully responsible for the manufacturers' warranty in respect of proper design, quality, and workmanship of all the systems supplied.
- During the warranty period, preventive maintenance and repairs of equipment supplied by the bidder are the responsibilities of the bidder. The bidder shall attend to all the hardware problems on site and also replace the defective parts at no extra cost to the purchaser.

5. Evaluation of bids

The technical bid will be evaluated first. Technical bids not meeting the specifications and tender requirements will be disqualified. The commercial bids of technically qualified bidders will be opened subsequently. The date and time of opening the commercial bid of Technically qualified bidders will be intimated later. The lowest bid will be identified as the successful bid. In computing the commercial offer, the cost of the equipment, will be identified as the successful bid. In computing the commercial offer, the cost of the equipment, software (if any), installation and commissioning charges, and warranty charges will be included. The actual quantity for which the order will be placed may be slightly more or may be less than the one indicated in this tender depending on the commercial terms of the successful bidder and funds at our disposal.

6. Additional guidelines

- If multiple systems can fulfill the requirements, vendors can submit multiple bids.
- The equipment must be supplied within **four weeks** after receiving a firm purchase order from IISc and the installation must be completed within a week after supply.
- A copy of the masked commercial bid (without indicating the price) must be given in the technical offer. If the price is indicated in the technical bid, then such a bid will be declared technically disqualified.
- Delayed or incomplete tenders are liable to be rejected.
- The Technical and Commercial bids should be duly signed (on all pages) by an authorized bidder representative.
- In the commercial bid, provide the cost of the complete workstation/server.
- Offer must be in Rupees (INR) offer. The GST at a concessional rate should be shown separately in the BOQ.
- Offer should be valid for at least 45 days from the actual date of technical bid opening.
- IISc will place the purchase order only on the successful bidder.
- 100% payment will be released after complete delivery and satisfactory installation. Payment will be subject to deduction of TDS as per rules/laws.
- Vendors are encouraged to highlight the advantages of their system over comparable system from the competitors.
- If multiple systems can fulfill the requirements, vendors can submit multiple bids.

Part C

Terms and Conditions

- The decision of the purchase committee will be final.
- The vendor is responsible for the installation of the system at the IISc campus.
- **The RFQ must include references of 5 previous installations in Bangalore, preferably in IISc/JNCASR/TIFR/ICTS/NCBS.** Please provide the names and contact addresses of the referees so that the committee can contact them independently. The reference letters can be used to disqualify vendors with poor track records.
- Clarify if periodic (preventive) maintenance be done by a trained on-site engineer or requires a specialist from the OEM. The vendor should have qualified technical service personnel for the equipment based in India and must assure a response time of <2 business days after receiving a service request.
- The lead-time for the delivery of the workstation should not be more than 1 month from

the date of receipt of our purchase order.

- The indenter reserves the right to withhold placement of final order. The right to reject all or any of the quotations and to split up the requirements or relax any or all of the above conditions without assigning any reason.
- Wherever requested in this specifications sheet, data must be supplied along with technical compliance documents. Technical bids without supporting data will be deemed as technically non-compliant.
- All guaranteed specifications will have to be demonstrated, upon request, in an active installation. Failure to demonstrate any promised specifications will be deemed as technical non-compliance.
- Technical evaluation by the institute may include demonstration to verify functionalities and capabilities of the workstation quoted. Any discrepancy between the promised specifications and demonstrated specifications will be deemed as technical non-compliance. If need arises, the vendor must be ready to physically visit IISc for a techno commercial discussion.
- The **validity of commercial quotation should be at least 180 days** from the last date for the submission of the tender documents.
- 100% payments will be released after completion of delivery and satisfactory installation subject to TDS as per rules. As per GFR no advance payment can be made to domestic vendors, unless an equal amount of bank guarantee is provided.

III. Guidelines for Bid Submission

Quotations should come only from Indian Original Equipment Manufacturers (OEMs) or authorized Indian distributors. The quotations should be on FOR-IISc Bangalore basis in INR only.

The submission consists of two parts, viz. a Technical Bid and a Commercial/ Price Bid.

The **Technical Bid** should be an *indexed and page-numbered* document containing:

- Duly filled-in and sealed & signed technical bid.
- Commercial bid compliance (without quoted price).
- Supporting technical materials for the items.
- Supporting documents listed.
- A signed document that the Bidder agrees to the Service Terms, Commercial Terms, and Payment Terms set forth in this tender.
- Reference is given as per the GFR.
- Format for local content declaration is attached in Annexure "A." No other format is acceptable (mandatory document).

The **Commercial/ Price Bid** should contain:

- The price per quantity and total prices for every line item. Prices must be quoted on FOR- IISc Bangalore basis in INR.

Note:

1. Prices of items in this tender's Commercial Bid must **NOT** be mentioned in the Technical Bid.
2. The line items in the Commercial (Price) Bid must be quoted in INR.
3. The commercial bid must be valid for at least 180 days from the actual date of opening of the technical bid.
4. A tender not complying with any of the above conditions is liable to be rejected. Incomplete proposals are liable to be rejected.
5. IISc reserves the right to modify the technical specifications or the required quantities or schedule of event at any time.

*(To be submitted In the company letter head by supplier)

Annexure A

Declaration of Local Content by Local supplier

Subject: Public Procurement (Preference to Make In India)

References:

Preference to Make in India including counter offering will be as per the Public Procurement

(Preference to Make in India), Order 2017 available in the following links

<https://dipp.gov.in/publicprocurements>

http://dipp.nic.in/sites/default/files/publicProcurement_MakeinIndia_15June2017.pdf

http://dipp.nic.in/sites/default/files/Revised-PPP-MII-Order-2017_28052018.pdf

<https://dipp.gov.in/sites/default/files/PPP->

[MII%20Order%20dt%2029th%20May%2019_0.pdf](https://dipp.gov.in/sites/default/files/PPP-MII%20Order%20dt%2029th%20May%2019_0.pdf)

<https://dipp.gov.in/sites/default/files/PPP%20MII%20Order%20dated%204th%20June%202020.pdf>

We hereby declare with reference to above subject and references that

M/s ----- (Tick whichever is applicable as below)

"Class-I local supplier" meeting the requirement of minimum local content equal to 50% (fifty percent) or more defined in the above government notification for the goods and services

(or)

"Class-II local Supplier" meeting the requirement of local content 20% to less than 50% (fifty percent) defined in the above government notification for the goods and services

(or)

Non Local supplier (If not belonging to Class-I & Class-II)

Please mention the details against the following:

Enquiry no:----- dated. -----

Type of Supplier (Class-I/Class-II)

Product:-----

Project:.....

Details of location at which local value addition will be made is as follows:

We also understand that the false declarations will be in breach of the code of Integrity under rule 175(1)(i)(h) of the General financial rules for which a bidder or its successors can be debarred for up to two years as per Rule 151(iii) of the General Financial Rules along with such other actions as may be permissible under law.

Authorized Signature M/s-----

(Signature and seal)

Place:.....

Date:.....