Ref: CnID/E&IG/2019/197143

Sub: Design, Fabrication & Assembly of LiDAR for a range of 180 m as per technical specifications as indicated in Para 16 below

Dear Sir / Madam,

1. Quotations are invited for the minor fabrication job as given in para 16 below.

2. Bidder shall quote for fabrication and supply of parts along with material as per bill of quantity and technical specifications.

3. The bidder should have completed similar work with reasonable value (more than 3 lakh) in the last 5 years.

4. Taxes and excise duties shall be quoted separately. Form AF / H whichever is applicable shall be provided, if required.

5. The quotation must reach, Head, Control Instrumentation Division by 07.11.2019, 18:00 hrs and must be sent in a sealed envelope super-scribed with the above reference number and due date given above. The quotation should be sent by speed post only. Quotation should also indicate GST No., PAN No., Sale Tax Registration No. and Service Tax Registration No. of the party.

6. The address on the envelope should read:

The Head, Control Instrumentation Division
Bhabha Atomic Research Centre
Trombay, Mumbai - 400 085
Attention: Shri Supratim Majumdar

7. The bidder shall have to take an insurance policy against any material issued to him by the purchaser.

8. The fabrication work shall be subject to inspection by our engineer. The finished components shall not be despatched prior to approval by our engineer, at bidder's works. Necessary inspection facilities should be provided to our engineers during a fabrication at bidder's premises.

9. The bidder shall complete supply, installation and commissioning job within THREE MONTHS from the date of the firm purchase order issued to the bidder. The finished components shall be delivered by the bidder at North Gate, BARC, TROMBAY, MUMBAI.

10. Head, Control Instrumentation Division, BARC, reserves the right to accept/reject any or all quotations without any reason.

11. Delivery charges if any must be clearly mentioned in the offer. Quotation must also indicate the validity of offer. Quotation must also indicate the GST no. and PAN no. of the party.

12. Drawings / Sketches must be returned along with the offer.

13. The quotation has to be signed by authorized person with company seal.

14. Payment will be made by cheque only after satisfactory completion of work on production of bill, delivery challan and advance stamped receipt. It may be noted that IT @ 2% and surcharge on tax will be deducted from your bills.

15. Job should be guaranteed against material and manufacturing defects & poor workmanship for one year from the date of supply.

16. Minor fabrication work:
Design, Fabrication & Assembly of LiDAR for a range of 180 m as per the technical specifications given in Annexure-1

Enclosures: 1. Technical Specifications as Annexure-1 (2 pages)
2. General Instructions as Annexure-2 (1 page)
3. Bill of material as Annexure-3 (2 pages)
Annexure-1
to Enquiry No. CnID/E&IQ/2019/107143 dated 22/10/19

Technical Specifications

An industrial high-speed LiDAR having the following specifications is required to be fabricated and assembled. It must also include compensation algorithms for outdoor glare and other interference, so that it works normally under strong light environment, rain, fog and snow conditions. It must also allow the user to change the parameters and configurations.

Quantity: Three (03) nos.

a. LiDAR specifications:
1. Operating range: 0.1m-180m (min.) @ 90% reflectivity
   0.1m-70m (min.) @ 10% reflectivity
   0.1m-130m (min.) @ 90% reflectivity & 100 Klux
   0.1m-50m (min.) @ 10% reflectivity & 100 Klux
2. Accuracy: ±10 cm or better (within 10m), 1% or better (10m and further)
3. Distance resolution: 1 cm
4. Frame rate: 1 Hz to 1 kHz (user programmable)
5. Repeatability: 1σ < 3 cm or less
6. Ambient light immunity: 100 Klux or better
7. Light source: Laser diode
8. Central wavelength: 905 nm
9. Photobiological safety: CLASS1 (EN60825)
10. FOV: 0.5° or better
11. Supply voltage: 5V or 15V
12. Power consumption: < 1.5W
14. Dimension: < 50 mm * 50 mm * 35 mm (L * W * H)
15. Enclosure material: Aluminum alloy or equivalent
16. Enclosure rating: IP67
17. Weight: < 90 gm
18. Mounting arrangement: 4 or more M3 mounting holes
19. Software for communication, configuration and distance data plot. It must be compatible with Windows 7® and Windows 10®.

b. Scope of the work:

1. Design, fabrication and assembly of LiDARs: 3 Nos.
2. Procurement of components as per attached BOM (Annexure-3) for the fabrication of LiDAR. Unused components will be returned to the user as spare. The fabricator will submit the Certificate of Conformance from the manufacturer of the components or original packing list/copy of delivery challan from the authorized distributors of the components from whom they have procured the components.
3. Testing and certification of the LiDARs.
4. Development of software for communication, configuration and distance data plot
5. Generation of user manual

NOTE: The bidder will have to submit the result of every step and take our permission to go ahead for next sub-step.
c. **Guarantee:**
The finished products shall be guaranteed for 1 year against defects and poor workmanship.

d. **Deliverables:**

The fabricator will have to supply the following:

- LiDAR: 3 Nos.
- Software for communication, configuration and distance data plot.
- User manual, test reports and certificates
- COC/Original Packing list/Copy of delivery challan of the manufacturers or their authorised distributors from whom the fabricator procured the components.

e. **Brief description of the work:**

The fabricator has to design, fabricate and assemble the LiDARs that will meet all the specifications mentioned earlier in this document. The fabricator will also develop the software for communication, configuration and distance data plot. The fabricator will test the LiDARs along with the software and will generate the test reports and certificates. All instruments required for testing will be arranged by the fabricator.

f. **Sub-Contract:**

The fabricator shall not sub-contract any or all the work without written consent from the purchaser. The fabricator shall be responsible to the purchaser for all work, done by the sub-contractor of the fabricator, if allowed by the purchaser.

g. **Quality surveillance, Inspection:**

Used or recycled materials will not be accepted. The work covered by the specifications shall be subject to surveillance/inspection by the authorized representative of the purchaser. The Supplier shall intimate the purchaser for inspection of the completed fabrication job.

h. **Confidentiality:**

1. No party shall disclose any information to any third party concerning the matters under this Contract generally. In particular, any information identified as "Proprietary" in nature by disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party. This clause shall apply to sub-contractors, consultants, advisors or the employees engaged by a party with equal force.

2. "Restricted information" categories under section 18 of the Atomic Energy Act, 1962 and "Official secrets" under section 5 of the Official Secrets Act, 1923: Any contravention of the above mentioned provisions by any contractor / sub-contractor, consultant, advisor or the employees of the contractor will invite penal consequences under the aforesaid legislation.

3. Prohibition against the use of BARC's name without permission for publicity purpose. The contractor or sub-contractors, consultants, advisors or the employees engaged by a party shall not use BARC’s name for publicity purpose through any public media like: press, radio, TV or Internet without any prior approval of BARC (wide circular ref.: 2/Misc-9/Lgl/2001/92 date 30/04/2001)
Mandatory requirements

1. Quotation should contain item wise price for all items of our enquiry.
2. Quotation to be submitted considering completion of the work within three months from the date of release of work order.
3. For installation & commissioning, I&C charges and service tax to be quoted separately.
4. All the electronic components, hardware, cables & other items shall be brand new from reputed manufacturers procured from their authorized agents.

General requirements

5. Bidder can suggest equivalent or better make and model number against each suggested Instruments/components and same to be approved by the customer.
6. Total time to execute the job given above is from the date of work order placed which includes design, procurements of components, fabrication, assembly and testing.
7. No Free Issue Material will be provided to the supplier. Materials, tools, manpower etc required for the above work will not be supplied by the user. Supplier has to arrange the above on his own.
8. The supplier must incorporate minor changes (20% of the overall design work) in the design as required at the time of execution of work at no extra cost.
9. Supplier shall submit the list of their clients, and catalogues or literature to support their quotation with the list of similar jobs carried out.
10. During work execution, the supplier shall follow standard practices & procedures for quality assurance.
11. **Sub contract:** The supplier shall not sub-contract any or all the work without written consent from the indenter. The supplier shall be responsible to the indenter for all work, the subcontractor of the supplier, if allowed by the indenter.
12. **Quality surveillance, Inspection:** The fabricator will use standard quality new material for fabrication. He will conduct BBT/FPT of all the PCBs used in the system. The fabricator will procure components (as per BOM) from the manufacturers or from their authorized distributors. Used or recycled materials will not be accepted.
13. **Acceptance Criterion:** Items meeting the Technical specifications only will be accepted. Any Item not meeting the Technical Specifications are liable for rejection.
14. For the items with detailed specification as given in Annexure-I shall be subject to surveillance/ inspection by the indenter or his authorized representative.

*The Supplier shall quote make of all these items in his quotation.*

15. *Without above detailed information offer will be considered incomplete and may be rejected.*
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<thead>
<tr>
<th>Sr. No.</th>
<th>Item Description</th>
<th>Part Number</th>
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<tr>
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<td>SM1 to M12 x 0.5 Lens Cell Adapter</td>
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<td>Laser Safety Glasses Light Green Lenses 59% Visible Light Transmission Universal Style</td>
<td>LG1</td>
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<td>Vis/IR Detector Card 400 - 640 nm 800 - 1700 nm</td>
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<td>Adapter with External SM05 Threads and Internal SM1 Threads</td>
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*Signature: [Signature]*

*Date: 18/10/2011*