To whom it may concern

This is a **Request for quote (RFQ) from domestic (India-based) manufacturers only** for procurement of Arbitrary waveform Generator (AWG) and associated software at the department of Electrical Communication Engineering (ECE), Indian Institute of Science, Bangalore.

All interested vendors shall submit a response demonstrating their capabilities to produce the requested equipment to the primary point of contact listed below.

With respect to this tender, the rules laid out by the Government of India in order No. P45021/2/2017-pp-BE-II issued by the Public Procurement Section, Department or Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, dated 4th June 2020 will be followed. As per this order, the government has defined a 'Class-I local supplier' as "a supplier or service provider whose goods, services or work offered for procurement, has local content equal to or more than 50%". A 'Class-II local supplier' is "a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%". Only Class-I and Class-II local suppliers are eligible to participate in this open domestic tender. Any "Non-local supplier" i.e. "a supplier or service provider, whose goods, services or works offered for procurement, has local content less than 20%" is ineligible to participate in this tender.

The deadline for submission of proposals is **12th April 2021 by 5:00 PM.** Proposals should arrive at the office of **Dr. Varun Raghunathan, Department of Electrical Communication Engineering, Indian Institute of Science, Bangalore, Karnataka 560012, India.** Direct all questions concerning the acquisition to **Dr. Varun Raghunathan** at: **varunr@iisc.ac.in .**

General Terms and Conditions
1. The bid should be submitted in the two-cover system, i.e. technical bid and commercial bid separately in sealed covers. The technical bid should contain all commercial terms and conditions, except the price.
2. The technical bid must contain a point-by-point technical compliance document. The technical proposal should contain a compliance table that should describe your compliance in a "yes" or "no" response against each of the items in the table listed in this RFQ. If "no" the second column should state the extent of deviation. The third column should state the reason for the deviation, if any. The fourth column can be used to compare your tool with that of your competitors or provide details as requested in the technical requirement table below.
3. In the commercial bid, the price should be inclusive of all discounts.
4. The vendor should have qualified technical service personnel for the equipment based in India (preferably in Bangalore).
5. The covering letter should clearly state the whether the vendor is a Class-I or Class-II local supplier. Failing this the bid will be automatically rejected.
6. The vendor to state the percentage of the local content and provide self-certification that the item offered meets the minimum local content requirement. They should also give details of the location(s) at which the local value addition is made.
7. The lead time for the delivery of the equipment should not be more than 3 months from the date of receipt of our purchase order. It should be clearly mentioned in the technical and commercial bids.
8. All the quotations must be valid for at least 90 days at the time of submission.

9. List of customers and references: **The Bidder should have supplied similar equipment in Central Universities preferably in centrally Funded Technical Institutes (IITs, IISC, IISER, NIT) . Please provide the details and contact information**.

10. 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 should be provided.

11. Items in addition to that listed in the technical table that you would like to bring to the attention of the committee, such as data sheets, technical plots etc. can be listed at the end of the compliance table.

12. Vendors are encouraged to highlight the advantage of their tools over comparable tools from the competitors.

13. If needed, a meeting for any technical clarifications can be scheduled with the undersigned by sending an email.

14. The Institute reserves the right to accept or reject any bid, or to annul the bidding process and reject all bids, at any time prior to the award of contract without thereby incurring any liability of the affected bidder or bidders.

15. Warranty terms and additional warranty options is a must for all the components. Please specify the service plan like whether the local distributor will address the issue or the parent company.

16. Terms and conditions for the annual maintenance contract beyond the warranty period should be mentioned.

17. After the award of purchase order, the vendor must provide an Order Acknowledgement within 30 days from the receipt of the Purchase Order.

18. Please quote the price of each optional line item, separately.

Technical requirements: Please note that the requirements listed below are only guidelines. It does not disbar bids that do not meet the criteria listed. Vendors are requested to quote for equipment that meet the criteria to the best extent possible and list deviations. Deviations are NOT an automatic reason for disqualification. They will be discussed by the technical committee prior to making an informed decision.

Specification list for Arbitrary waveform generator		
S. No.	**Specification detail**	**Value**
1.	Number of channels	Analog: minimum of 2 Digital: minimum of 3
2.	Bit resolution	16-bit minimum
3.	Bandwidth	400 MHz minimum, voltage range to be specified
4.	Slew-rate	To be specified for the above bandwidth
4.	Sampling rate	1.25 GSamples/sec
5.	Output amplitude	+/- 2 V for 50 ohm load +/- 4 V high impendence load
6.	Minimum step-size	1 mV for 50 ohm load 2 mV for high impendence load
7.	Output accuracy	+/- 0.5 mV maximum
8.	Output offset range	+/- 1 V
9.	10-90% rise time	1 nano-second maximum
10.	Trigger modes	External, Software and others to be specified
11.	Trigger edge	Rising, Falling, others to be specified
12.	Trigger delay	To be specified

13.	Trigger accuracy and minimum pulse width	To be specified
14.	External trigger specifications	To be specified
15.	Clock specifications	To be specified
16.	Digital I/O (DIO) signal type	Asynchronous DIO
17.	DIO voltage level	3.3 V max (LVTTL)
18.	SNR	> 65 dB for 50 MHz single tone
19.	SFDR	> 85 dB for 50 MHz single tone
20.	ENOB	> 11
21	Trigger output	Required
22.	Output modes	Single shot, repeated, Ext. triggered, Single restart, FIFO, Multiple replay, gated replay, sequence mode
23.	Sequence mode	No. of steps, sequence size, loop count - to be specified
24.	Connectors	SMA or MMCX
25.	Form factor	PCIe card or box solution
26.	Operating system	Windows 64-bit and linux
27.	Software	To be included
28.	Third party drivers	C/C++, Labview, Matlab to be included. Any others to be specified
29.	Cables for connection	To be included

Other requirements:	
1.	Compatible operating system(s) for the interface software should be specified. Suitable software drivers available should be specified.
2.	Please include other hardware/ software options currently available which can be added on in the future.
3.	Training and installation: Different options for training and installation by service engineer to be listed and quoted.
4.	The cost of shipping to IISc should be included.
5.	List of acceptance tests for on-site (vendor) inspection and after installation at IISc.
6.	A set of basic experiments for performing routine checks of acceptable operation with clear instructions to be provided.
7.	The payment terms will be specified in the commercial proposal and is subject to negotiations.
8.	Please provide details of the number of trained personnel in India, number in southern region or in Bangalore who can service the instrument.

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