

Notice of Intent: NB688000-16-04969

Status: Open

Description of Contract Action: Gateway and GUI improvements for ARTIQ experimental control system (ARTIQ3).

Post Date: 08/26/2016

Close Date: 08/31/2016

File Name: NB688000-16-04969 / Gateway and GUI improvements for ARTIQ experimental control system (ARTIQ3).

Contact Points: Dennis Fuentes, Contract Specialist (303) 497.5573
Jo-Lynn Davis, Contracting Officer (303) 497-3764

This requirement is conducted under Federal Acquisition Regulation (FAR) 13.106-1(b). This is a notice of intent to negotiate on a sole source basis and is not a request for competitive proposals. Firms who want to challenge the sole source must submit an interest letter that demonstrates your firm's ability to provide an equivalent service as described below. Interested parties must provide rationale as to why they should be considered. All interested firms must respond to this special notice by 31 August 2016, 11:00am, Mountain Time to Dennis M. Fuentes at dennis.fuentes@nist.gov. Responses received will be assessed; however, a determination by the Government not to compete the proposed procurement based upon responses to this notice is solely within the discretion for the Government. Information received will normally be considered solely for the purpose of determining whether to conduct a competitive procurement. NIST will not reimburse for any costs connected with providing the capability information.

Description: The National Institute of Standards and Technology (NIST), intends to negotiate and award on a sole-source basis under the authority of FAR 13.106-1 (b) with M-Labs, LTD, in Hong Kong. To perform this service, the contractor must be authorized to provide extensions to the ARTIQ experimental control framework for the NIST. The services are intended to provide implementation of a number of technically demanding, detailed modifications, and extensions to an existing piece of complex custom software and the vendor is required to have a solid understanding of the ARTIQ system and custom designed software. The contractor must demonstrate a detailed understanding of the existing ARTIQ system architecture and design, which is necessary for successful implementation of the work. The contractor must also have suitable experience in designing and implemented FPGA firmware/gateway as well as graphical user interfaces using Qt and PyQt. Demonstrated expertise with core ARTIQ technologies, including but not limited to Python, C, Migen, LLVM, MiSoC/mor1kx, llvmlite, Qt, pyqt, or suitable interoperable equivalents, is required. The contractor must also have demonstrated experience working closely with physical scientists as end customers. References must be made available upon request from previous basic science collaboration work, attesting to the qualifications of the contractor for a project of this nature. The contractor shall provide all support for project oversight, administration and technical execution. Sole Source determination

is based on the market research that shows only one vendor can comply to this critical process that meets all of the NIST technical requirements.

The NAICS code 541511 – Custom computer programming services, and the Small Business Size Standard is \$27.5M will be used.

DELIVERABLES: This is a Performance Based Contract with the following deliverables/objectives:

<i>Number</i>	<i>Description</i>	<i>Format</i>	<i>Quantity</i>	<i>Due Date</i>
1	Support for reading value of a TTL input	Source code, compiled bitstreams, documentation, and compiled ARTIQ code integrated with current ARTIQ conda deployment	1	4 months from date of award
2	Applet control from experiments	Source code, documentation, and compiled ARTIQ code integrated with current ARTIQ conda deployment	1	4 months from date of award
3	Fire-and-forget RPC from the core device	Source code, compiled bitstreams, documentation, and compiled ARTIQ code integrated with current ARTIQ conda deployment	1	4 months from date of award