



DEPARTMENT OF THE NAVY

NAVAL RESEARCH LABORATORY
4555 OVERLOOK AVE SW
WASHINGTON, DC 20375-5320

IN REPLY REFER TO:

4200

Ser 10-3367

August 4, 2010

JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION, Purchase Request 61-0287-10, JEOL USA, Inc. AccuTOF-GCv System

1. The Department of the Navy, contracting through the Naval Research Laboratory, proposes to enter into a contract on other than a full and open competitive basis.

Procurement of AccuTOF-GCv mass spectrometer detection system with gas chromatograph. The vendor is JEOL USA, Inc., 11 Dearborn Road, P.O. Box 3043, Peabody, MA 01960-3043 USA.

2. Nature and/or description of the action being approved.

This procurement supports a DARPA project aimed at development of a new generation of hyper absorptive chemical samplers and high-throughput analytical detection systems capable of quantitatively and exhaustively cataloging the constituents of complex gas mixtures. The system will accurately identify and rank the amounts of all components from an established database and quantify the materials not in the library are present. The system will accept gas mixtures whose individual analytes may be present in quantities as low as 500 picomoles or as high as 50 micromoles. The final objective of the program is to develop a capability for comprehensive analysis of up to 300,000 samples per 24 hour day. This mandates very fast chemical separations, which necessitates high mass accuracy, and high mass resolving power to discriminate coeluting analytes. These operational requirements dictate need for an exceptional level of analytical performance to validate prepared challenge samples.

This is a new contract action.

3. Description of the supplies or services required to meet the needs of the Naval Research Laboratory including the estimated value.

The required GC-TOFMS system must meet or exceed the following specifications.

Gas Chromatograph:

An integrated, complete, capillary gas chromatograph system with:

- Electronic pressure control and programmable split/splitless injector.
Temperature programmable oven with greater than 30 °C/min temperature ramp speed

- Compatibility with a wide range of third-party inlet devices, such as thermal desorption or gas concentrator units, including integrated software control of compatible third-party devices
- Compatibility with 100-sample autosampler system for extended operation time
- NIST/EPA/NIH spectral database and software for compound elucidation from EI fragmentation mass spectral pattern matching

Time-of-Flight Mass Spectrometer

An integrated time-of-flight mass spectrometer which includes/provides:

- The components of the TOFMS system cannot exceed 79 inches in height and 46 inches along the shorter side, and the system cannot exceed 1500 pounds in total
- Electron-impact ionization generating database searchable EI fragmentation spectra
- Isolation vacuum valve, ion transmission guide, ion accelerator, ion detection unit, and analog-to-digital converter system
- 2000 Thompson mass range or better
- Simultaneous mass spectra every 40 ms
- 5 parts-per-million mass accuracy or better
- Greater than 6000 resolving power (FWHM)
- Mass spectra generated at a rate of 10 kHz or faster and averaged to provide an improved signal-to-noise ratio at an averaged spectral-generation rate of 25 Hz or faster.
- The capability to optimize detection of a wide range of potential analytes. In particular, the capability to generate, separate, and detect both positive and negative ions
- Quantitative measurement of each component gas in an input mixture over concentration ranges spanning four or more orders of magnitude while providing accurate compound elucidation with database-searchable electron-impact (EI) fragmentation spectra and advanced mass spectral pattern matching.

Computer Hardware and Software:

- The computer must control the TOF Mass Spectrometer and the Gas Chromatograph system in an integrated fashion and must provide data analysis and output. The instrument operating software must be a fully integrated suite which allows desktop control of all relevant instrument operating parameters. These parameters include the automated operation of any associated gas-chromatography systems and autosamplers.
- The software must be compatible with commercially available personal computers or workstations running on a commercially available platform.

The Contractor shall provide a Microsoft Windows compatible computer which will contain all necessary hardware and operating software required to operate all of the equipment specified herein. All hardware and software, including drivers, device interface cards, or controller cards must be pre-installed and pre-configured on the computer provided. The computer must have sufficient computational power and memory to use the features in the software. All necessary software licenses for the computer and software provided shall be included.

3.1. Statement of delivery requirements

Delivery is required 120 days after award.

3.2. The total estimated dollar value (including all options) for the acquisition(s) covered by the justification.

The estimated dollar value is \$179,900.

4. Identification of the statutory authority permitting other than full and open competition.

The justification for a procurement that is other than full and open is 10 U.S.C. 2304(c)(1) - Only one responsible source.

5. Demonstration that proposed contractor's unique qualifications or nature of the acquisition requires use of the authority cited.

Previously, an AccuTOF-GCv time-of-flight mass spectrometer (TOFMSS) detection system was purchased from JEOL USA, Inc. to support this program. This purchase (N00173-10-C-2030) was competitively solicited on December 22, 2009 and the purchase was executed May 05, 2010. A second, duplicate instrument is requested to provide robustness to instrument failure and to increase analytical throughput during testing. In order to insure compatibility and interchangeability of parts, accessories, and analytical methods, it is necessary that an instrument identical to the original be purchased from JEOL USA, Inc. Thus, as per FAR 6.302-1(c), the AccuTOF-GCv system provides compatibility with existing hardware at NRL that is unobtainable from vendors other than JEOL USA, Inc.

6. A description of efforts made to ensure offers are solicited from as many potential sources as is practicable including whether a synopsis notice was or will be publicized.

The requirement was publicized in the Government-wide Point of Entry (GPE) on August 4, 2010.

7. Determination by the Contracting Officer that the anticipated cost to the Government will be fair and reasonable.

Previously, an AccuTOF-GCv time-of-flight mass spectrometer (TOFMSS) detection system was purchased from JEOL USA, Inc. to support this program. This purchase was competitively solicited on December 22, 2009 and the purchase was executed May 05, 2010. Thus, the JEOL system has previously been determined to be of fair and reasonable cost.

8. Description of the market research conducted and results or statement of the reasons a market research was not conducted.

Previously, an AccuTOF-GCv time-of-flight mass spectrometer (TOFMSS) detection system was purchased from JEOL USA, Inc. to support this program. This purchase was competitively solicited on December 22, 2009 and the purchase was executed May 05, 2010. During the competitive bid process, one other respondent was identified and evaluated. The respondent offered a different Time-of-Flight Mass Spectrometer than what was purchased from JEOL USA, Inc.

9. Any other facts supporting the use of other than full and open competition:

None.

10. A listing of the sources, if any, that expressed, in writing an interest in the acquisition.

11. A statement of the actions, if any, the agency may take to remove or overcome any barriers to competition before any subsequent acquisition for the supplies or services required.

This is a one-time purchase.

12. Certification and Approval signatures.

**TECHNICAL AND REQUIREMENTS CERTIFICATION
REQUIRED BY FAR 6.303-2(b)**

I certify that the facts and representations under my cognizance which are included in this justification which form a basis for this justification are complete and accurate.

Technical Cognizance

(Signature) Kevin Johnson 6181 [REDACTED] 8/9/10
Name and Title Code Phone Date

Requirements Cognizance

(Signature) Kevin Johnson 6181 [REDACTED] 8/9/10
Name and Title Code Phone Date

CONTRACTING OFFICER CERTIFICATION REQUIRED BY FAR 6.303-2(a)(12)

I certify that this justification is accurate and complete to the best of my knowledge and belief.

(Signature) Carol A. Penner 3230 [REDACTED] 12 Aug 10
Name and Title Code Phone Date

APPROVAL BLOCK REQUIRED BY FAR 6.304 (see FAR 6.304 and DFAR 206.304 for Approving Official):

APPROVED:

(Signature) _____
Name and Title Code Phone Date