Department of the Air Force: Justification for Other Than Full and Open Competition

For use when a justification and approval as described in RFO 6.104 is required, to include restricting competition under Part 12 for acquisitions valued over SAT.

Dollar Value of this Acquisition: ☒ ≤ $10M ☐ > $10M and ≤ $100M ☐ > $100M and ≤ $500M ☐ > $500M

CERTIFICATIONS: CO certification serves as J&A approval ≤ $10M, *See* **J&A Template Guidance** *at https://usaf.dps.mil/sites/AFCC/AQCP/KnowledgeCenter/SitePages/DAF-Contracting-Compass/Part-6---Competition-Requirements.aspx#exceptions-to-full-and-open-competition-mandatory* J&A Template Guidance tab

Date		Signature
22 June 2026	[redacted]	[redacted]
I certify that this justification is accurate and complete to the best of my knowledge and belief.		

Date	Technical and Requirements Personnel (RFO 6.104(b))	Signature
22 June 2026	[redacted]	[redacted]
I certify that the supporting data herein, which is my responsibility, is accurate and complete.		

COORDINATION

APPROVALS (RFO 6.104-2(a) Table 6-1 & R-DFARS 206.104-72 Table 206.1)

See J&A Template Guidance (https://usaf.dps.mil/sites/AFCC/AQCP/KnowledgeCenter/SitePages/DAF-Contracting-Compass/Part-6---Competition-Requirements.aspx#exceptions-to-full-and-open-competition-mandatory) - Justification Approvals tab

NOTE 1: A signature block will appear here (replacing these notes) based on the "Dollar Value of this Acquisition" selected above. Since most digital signatures that include date/time-stamps are redacted before they are made publicly available, always insert the date in the "Date" cell when affixing a digital signature to this document.

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I. Agency and Contracting Activity (RFO 6.104-1(a)(1)):

AFRL/RIZ
1864 Fourth Street, Bldg 15
Wright-Patterson AFB, OH 45433

II. Nature and/or description of the action being approved (RFO 6.104-1(a)(2)):

This document approves the award of a firm-fixed price purchase order on a sole source basis to Polytec, Inc. for the purchase of a VibroFlex QTec Fiber Optics Laser Doppler Vibrometer System in support of the Structural Validation Branch. This justification is made on an Individual basis.

III. Description of supplies/services required to meet agency needs (RFO 6.104-1(a)(3)):

The Air Force Research Laboratory, Structural Validation Branch (AFRL/RAVZ) requires a single-point Laser Doppler Vibrometry (LDV) system to measure the dynamic response of structural components within its thermoacoustic test facilities. This capability is critical to supporting multiple hypersonic research and development programs, as well as flight test hardware qualification testing.

To meet these extreme testing requirements, the system must utilize Polytec's proprietary QTec® laser technology. This advanced technology enables highly accurate, non-contact velocity measurements directly on raw, untreated surfaces under extreme conditions, facilitating crucial in-situ, high-temperature structural diagnostics without the need for surface preparation.

The requested instrumentation suite consists of ten (10) VibroFlex QTec single-point sensor heads equipped with fiber-optic lenses, each interfacing with a corresponding VibroFlex Connect Front End which serves as the system controller and data output module.

System configuration, data acquisition, and analysis are managed via Polytec MDE controlling software. This software platform supports the concurrent integration of up to eight (8) sensors, enabling test engineers to define measurement geometries, display real-time data, perform advanced signal analysis, and export datasets.

To support concurrent testing requirements, the hardware will be deployed across AFRL/RAVZ facilities as follows:

- Eight (8) sensor channels will be permanently integrated into the Large Thermoacoustic Test Facility.
- Two (2) sensor channels will be allocated to the Small Thermoacoustic Test Facility.

IV. Statutory Authority Permitting Other Than Full and Open Competition (RFO 6.104-1(a)(4)):

10 U.S.C. 3204(a)(1), Only one responsible source and no other supplies or services will satisfy agency requirements.

RFO 12.201-2, Other procedures - 10 U.S.C. 3204(a)(1)

V. Rationale for Use of Authority (RFO 6.104-1(a)(5)):

AFRL/RAVZ already owns and operates multiple Polytec systems, specifically the VibroScan PSV-600-3D and the PSV-500-1D systems, utilizing the proprietary PSV Software package. The new fiber-optic system must seamlessly integrate, communicate, and scale with this existing hardware and software suite. Introducing a different manufacturer's system would create major software incompatibilities and require entirely separate data-acquisition protocols.

A non-Polytec system would force the government to purchase entirely new software licenses, data acquisition hardware, and specialized training for the engineering staff. Leveraging the existing Polytec ecosystem avoids these redundant capital expenditures and prevents project delays associated with training personnel on a completely different software platform.

In addition, the system must operate at a 1550 nm wavelength to bypass destructive optical interference caused by the quartz lamp radiant heating systems used in the AFRL/RAVZ test cells. Polytec's fiber-optic QTec system operates at this exact telecom wavelength, pairing a 1550 nm measurement laser with a visible spotting laser down a single fiber line, allowing precise targeting inside the sealed heating chamber.

VI. Integrated Market Analysis and Efforts to Solicit Competition (RFO 6.104-1(a)(6), (8), and (10)):

Market research was conducted to identify a laser vibrometer system that meets all specified requirements for the RAVZ test facilities in support of several hypersonic vehicle research efforts. The system is required to acquire highly accurate velocity measurements through heat lamp radiation without any surface treatment on the test specimens and have compatibility with the existing laser vibrometry hardware AFRL/RAVZ currently owns. The Minimum Requirements Document (MRD) established firm, mandatory technical characteristics for this procurement.

After consulting with Subject Matter Experts (SMEs) and evaluating multiple vendors and products, AFRL/RAVZ determined that the Polytec VibroFlex Connect/QTec system is the only system that meets all salient requirements outlined in the MRD.

Market research confirmed that there are currently no small business set aside opportunities for these services, and they are not available through GSA or AbilityOne. Given that only the manufacturer, Polytec, can meet the requirements, minimal additional market research was conducted at this time. Polytec was directly contacted, and they provided a quote along with a sole-source letter confirming they are the sole source provider to fulfill the requirement.

VII. Determination of Fair and Reasonable Cost (RFO 6.104-1(a)(7)):

The Contracting Officer is responsible for evaluating, determining, and documenting the anticipated contract cost/price is fair and reasonable in accordance with RFO Subpart 15.4, Contract Pricing.

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VIII. Any Other Facts Supporting the Justification (RFO 6.104-1(a)(9)):

QTec is a proprietary multi-path interferometer technology developed exclusively by Polytec. It utilizes heterodyne detection with multiple optical channels to eliminate "speckle dropouts" and signal noise. This allows for highly accurate velocity measurements on untreated, rough, or moving surfaces. No other manufacturer offers this specific multi-channel signal processing technology.

IX. Actions to Overcome Barriers to Competition (RFO 6.104-1(a)(11):

AFRL/RAVZ and the AFRL/RIZ will continue to survey the open market to see if any new products or manufacturers enter the marketplace and could meet the Government's requirements.