NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
IT Procurement Office (ITPO)
LIMITED-SOURCES JUSTIFICATION
For Pacific Instruments DAS Hardware

This is a Limited-Sources Justification (LSJ) prepared by the National Aeronautics and Space Administration (NASA) IT Procurement Office (ITPO).

This acquisition will be conducted under the Multiple Awards Schedule (MAS) Program (Title 41 U.S.C. 152(3)). This action is for a firm-fixed price delivery order for Pacific Instruments DAS Hardware.

It is anticipated that award will be made to Pacific Instruments, Inc. under General Services Administration (GSA) Federal Supply Schedule (FSS) Schedule # GS-07F-038CA.

The total estimated price of the proposed order is [redacted] and the estimated lead-time for delivery is 90 Days from date of award.

Authority Cited: The statutory exception supporting the placement of this order that exceeds the SAT on a sole source basis is:

☐ FAR 8.401(b)/GSAM 538.7104-3(b)(i). The need is of such unusual urgency that following normal procedures would result in unacceptable delays in fulfilling the need.

☒ FAR 8.401(b)/GSAM 538-7104-3(b)(ii). Only one source is capable of providing the products, services, or solution required at the level of quality required because the products, services, or solutions are unique or highly specialized.

☐ FAR 8.401(b)/GSAM 538.7104-3(b)(iii). The order should be issued on a sole source basis in the interest of economy and efficiency because it is a logical follow-on to an FSS order already issued on a competitive basis.

☐ FAR 8.401(b)/GSAM 538.7104-3(b)(iv). It is necessary to place the order with a particular FSS contractor to satisfy a minimum guarantee established in the FSS BPA.

☐ FAR 8.401(b)/GSAM 538.7104-3(b)(v). A law expressly authorizes or requires that the purchase be made from a specified source. Identified law is:_____

☐ FAR 8.401(b)/GSAM 538.7104-4(b)(1), Items peculiar to one manufacturer. The particular brand name, product, or feature is essential to NASA's requirements, and market research indicates other companies' similar products, or products lacking the particular feature(s), do not meet, or cannot be modified to meet, the need.

Rationale:

In accordance with FAR 8.104(b)/GSAM 538.7104-3(b)(2), justifications must include sufficient detail and supporting rationale to support the exception used. The detail and supporting rationale to support the exception used is provide below:

This Limited Sourcing Justification supports the procurement of Pacific Instruments 6000 Series Data Acquisition System (DAS) hardware to expand the existing Enhanced Digital Access Communications System (EDACS) architecture at the E Complex E1 Test Stand at NASA Stennis Space Center (SSC). The required hardware is identical to those currently deployed, ensuring continuity in system configuration, performance, and safety. The E Complex previously implemented the Pacific Instruments 6000 Series DAS as a foundational component of its control and data infrastructure, and this procurement represents a direct expansion of that installed system. The additional hardware must match the existing platform in all critical aspects, including manufacturer design, interface compatibility, signal conditioning characteristics, filtering behavior, timing and synchronization mechanisms, and chassis backplane architecture.

Market research was conducted utilizing various methods such as reviewing the Pacific Instruments 6000 series module literature online, reviewing various DAS and signal conditioning competitor catalogs, and a query of Government and/or commercial databases for relevant information. Pacific Instruments is the only source capable of fulfilling this requirement because it is the original equipment manufacturer of the 6000 Series DAS hardware. Pacific Instruments does not authorize resellers or third-party distributors for these products. The proprietary nature of the system's architecture, including its internal communication protocols, calibration workflows, and safety-critical input/output configurations, restricts compatibility to equipment produced exclusively by Pacific Instruments. The existing E-complex Data Acquisition & Control System implementation at the E Complex is tightly integrated with these proprietary elements, including compliance with SSP NASA-SOMD-HSCD-M-3159 requirements for signal protocols, timing determinism, and safety integrity. Only Pacific Instruments hardware can ensure native integration with these established system parameters.

The use of any alternate manufacturer or substitute solution would introduce significant technical and programmatic risks. Non-identical hardware will not be compatible with the existing chassis backplane or system interfaces, resulting in integration failures or the need for costly and time-consuming system modifications. Differences in signal conditioning performance, filtering, and timing synchronization will compromise data accuracy and disrupt the deterministic behavior required for propulsion test operations. Additionally, substituting hardware would invalidate existing configuration control baselines and could necessitate extensive revalidation of safety-critical systems, potentially impacting mission assurance and operational readiness. Such disruptions would delay ongoing controls modernization efforts and could introduce

unacceptable risks to personnel such as potential loss of life, potential loss of equipment, and potential loss of test objectives.

Pacific Instruments has confirmed that no other vendors are able to provide the required products, capabilities, and support. Furthermore, the requested products are the only solutions that are fully compatible with one another and will continue to be supported by Pacific Instruments.

In summary, the procurement of Pacific Instruments 6000 Series DAS hardware is essential to maintain system integrity, ensure seamless integration with the existing EDACS architecture, and preserve the safety and performance standards required for E Complex operations. Given the proprietary design, lack of authorized resellers, and the critical need for identical hardware to support configuration control and safety compliance, Pacific Instruments is the only responsible source capable of meeting this requirement.