

JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION (JOFOC)
(In accordance with Federal Acquisition Regulation (FAR) 6.3 – Other than Full and Open Competition)

- 1. This document is a justification for other than full and open competition prepared by NASA's Goddard Space Flight Center (GSFC), to address the requirements of all participating Centers, as cited below.**
- 2. The nature and/or description of the action being approved:**

NASA proposes to award multiple cost reimbursement indefinite-delivery indefinite-quantity (IDIQ) contracts directly to The Aerospace Corporation (Aerospace), a Federally Funded Research and Development Center (FFRDC). NASA Centers (Headquarters, GSFC/Ames Research Center, Johnson Space Center/Glenn Research Center/Dryden Flight Research Center, Marshall Space Flight Center/Stennis Space Center, and Langley Research Center) have identified requirements for programmatic, scientific, and engineering support activities for programs and projects. The Centers' contracts with Aerospace will have various ordering periods in order to align and be consistent with the current period of performance of the United States Air Force's (USAF) contract with Aerospace. The USAF's current contract with Aerospace expires in November 2013 and the planned follow-on contract will expire in November 2018.

- 3. Description of the supplies or services required, including an estimated value:**

As designated in the FFRDC Users Guide established between the Air Force and Aerospace, all work performed by Aerospace for non-DOD FFRDC work on a direct contract shall fall within one or more of the core competencies and, if applicable, one or more of the Systems Engineering core functions. Therefore, all work performed by Aerospace for NASA shall be within scope of the designated core competencies and Systems Engineering core functions. The core competencies are Launch Certification, Systems-of-Systems Engineering, Systems Development and Acquisition, Process Implementation, and Technology Application. The System Engineering core functions are Systems Architecture Planning and Development; Operational Requirements Analysis and Evaluation; Integration Management; Mission and Threat Analysis; Technical Performance Analysis and Assessment; Acquisition Planning, Preparation, and Evaluation; Program, Milestone, Design, and Readiness Reviews; Technology Requirements, Applications, and Research; Programs System Engineering; Monitoring Launch Vehicle and Satellite Processing; and Certifying Launch Readiness.

Aerospace shall provide technical products and services to NASA. The scope of work covers independent assessments of selected NASA programs and projects. This work covers the independent validation of program or project technical risks, including assessment of cost estimates and schedules as well as evaluation of safety and mission assurance risks. These assessments review all aspects of design and discipline engineering, engineering processes, systems engineering, manufacturing, assembly, test and operational mission capabilities, as well as independent nuclear safety reviews. In addition, Aerospace shall

provide NASA with highly specialized functional discipline expertise that is not readily available within the Government for service on evaluation panels and boards. This expertise will be used to evaluate proposals and competitive mission concepts, cost evaluations, project and program assessments, and studies. Other activities include reporting on evaluation panel findings. The cost assessment capability covers technology development, space systems (including instruments), and related ground systems, as well as the life-cycle costs associated with all these elements. This support also includes science related activities, such as, but not limited to, the evaluation of systems for handling extraterrestrial materials, assessment of whether a proposed instrument concept meets specific scientific goals, and evaluation of the applicability of science concepts to particular missions. Aerospace shall be required to conduct assessments of current and potential NASA programs. Types of assessments include technical; management; cost; risk; environmental impact; mission trajectory; resource utilization; analyses of instruments, spacecraft and launch vehicle designs; systems engineering; fabrication; and assembly, test and launch operations. Technical assessment activities include assessing the likely performance of technical systems and impact of new technologies on technical systems. Management assessment activities include assessing the effectiveness of management systems, processes, tools, and assessing components of NASA programs. Cost assessment activities include estimating mission development and life-cycle costs and assessing cost risk.

Aerospace shall be required to conduct management, scientific, and technical studies. Detailed examples of these studies are as follows:

Management studies include gathering information and analyzing options for possible management systems; gathering information and analyzing the structure and performance of actual management systems in NASA programs and in similar endeavors; and assembling and maintaining an inventory of the content and status of NASA programs.

Scientific studies include gathering information and analyzing systems for handling and analyzing samples of extraterrestrial materials; defining payloads to meet scientific goals; investigating potential science objectives for small, low-cost missions; and investigating the applicability of science concepts to particular missions.

Technical studies include analyzing the feasibility of instrument, spacecraft and mission design; investigating mission options and associated performance expectations; analyzing system designs; analyzing technologies needed to accomplish specific goals; analyzing propulsion and mission operations capabilities; and analyzing data handling and analysis systems.

Aerospace will provide its state-of-the-art laboratories for testing and evaluation of NASA engineering prototypes and space flight hardware.

The estimated value and the total period of performance (base plus options) of each contract are as follows:

Headquarters – \$89M; 7 years, 4 months
GSFC/ARC – \$154M; 7 years, 11 months
JSC/GRC/DFRC – \$210M; 7 years, 8 months
MSFC/SSC – \$18M; 6 years, 4 months
LaRc - \$55M; 8 years, 8 months

These periods of performance are different in order to align the end dates with the expiration date of the USAF contract with Aerospace which is planned to expire in November, 2018. A deviation to NASA's 5-year period of performance limitation was approved at the Procurement Strategy Meeting (PSM) held on September 3, 2009, as reflected in the PSM minutes.

4. Statutory authority permitting other than full and open competition:

The statute permitting other than full and open competition is 10 U.S.C. 2304(c)(3) “ to establish or maintain an essential engineering, research, or development capability to be provided by an educational or other non-profit institution or a federally funded research and development center” as described in FAR 6.302-3, “Industrial mobilization; engineering, development, or research capability; or expert services.”

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

Aerospace's capabilities deemed essential by NASA must be maintained. These capabilities are not currently available elsewhere in their entirety and cannot be duplicated. These capabilities consist of diverse technical and programmatic skills, management skills, unique and unsurpassed corporate memory of data on space systems, broad and deep insight and interaction with industry, substantial technical tools, superior engineering methods, advanced facilities and extensive experience with NASA programs. The strength of Aerospace is its ability to draw on research and development resources to solve complex and system level problems with extensive unequalled experience and access to a repository of data on both military and civilian space missions. These capabilities allow Aerospace to make independent evaluations for NASA that are not available from any other source. It is essential for NASA that these unique capabilities be maintained.

Aerospace operates as a FFRDC for the Department of Air Force, Space and Missile Systems Center (SMC), serving as the architecture and engineering arm for national security and space programs. This unique role has positioned them to develop a breadth and depth of technical expertise found in no other single technical organization in government or industry. In the role of a FFRDC for DOD, Aerospace possesses numerous qualifications that make it solely qualified to provide the required support for NASA. These qualifications include: unique inventory of facilities, tools, and expertise - the sum total of which is unique within the U.S. and parts of which are unique to the planet, such as historical payload information, a historical cost and pricing data inventory, and a technology development and utilization inventory that only Aerospace possesses; demonstrated experience in systems engineering of highly integrated space systems; developed and maintained diagnostic facilities and staff in

electric propulsion, space environmental effects and microelectronics evaluation; demonstrated experience in conducting evaluations of space hardware augmented by internal design and development experience; objective technical analyses and assessments for space systems development and acquisition; staff of experienced scientists and engineers with breadth of space system skills; structure to facilitate consolidation and sharing of civil and National Security Space lessons learned; demonstrated capability to conduct launch vehicle performance certification; and demonstrated experience to oversee high reliability space process implementation.

Procurement by other than full and open competition of the described acquisition is necessary in order to maintain and utilize an essential independent engineering, research, and assessment capability at the national level for use by both the civil and military space programs of the U.S. The required products and technical services are to be provided by Aerospace through its status as a FFRDC. In its final report, the Columbia Accident Investigation Board (CAIB) cited the support provided to the National Security Space Program by Aerospace as a model that NASA should consider adopting (Page 184, Volume 1). The CAIB took special note of Aerospace's "unique technical capabilities and its independence and freedom from cost and schedule pressures."

The highly technical nature of the work performed by NASA drives the need for access to a variety of technical hardware, software, extensive databases and information sources. Due to the potential levels of proprietary information involved, the ability to obtain, integrate, and protect proprietary information from multiple contractors without fear of compromise is also a requirement for any organization doing this work. It is the charter and nature of Aerospace to work in an independent fashion, provide highly technical and diverse technical products and services, and protect customer and industry proprietary information. Aerospace will draw upon the experience base it has developed over the past 45 years in providing highly technical scientific and engineering products and technical services to other government agencies. Aerospace will also participate in the development, implementation, and monitoring of engineering and fabrication processes across NASA.

Aerospace will provide technical products and services to NASA in the areas of engineering design, development, and test for space flight programs assigned to NASA, such as the Space Shuttle, International Space Station, Exploration Systems, and advanced spacecraft. Aerospace will also provide in-house designing, developing, fabricating, and testing of certain prototype government furnished equipment. Aerospace will provide the necessary unique facilities, tools, and expertise to supplement NASA expertise in various disciplines such as guidance, navigation, and control; electrical power generation, storage, and distribution; all other avionics systems including data management, display and control, and instrumentation; telemetry and communications; structures and materials; thermal protection and thermal control; mechanical systems; propulsion, fluid management, and pyrotechnics; environmental control and life support; spacesuits and extravehicular equipment; aerodynamics, aerothermodynamics, and aero-elasticity; flight software; mission planning and analysis; robotics and advanced automation systems; and overall systems engineering and simulation. Aerospace will supply expertise in fabrication and test facilities. Additionally,

- Aerospace will provide state-of-the-art laboratories and expertise to NASA.
- Aerospace will provide conceptual designs, feasibility studies, analysis, development, qualification testing, flight certification, operations, and sustaining engineering.
- Aerospace will coordinate its internal Research and Development efforts in technology and development of new concepts for implementation in these areas of expertise.
- Aerospace will carry out a broad set of activities including technology and advanced development tasks for the purposes of improving system and program capability, operability, reliability, safety, and life cycle costs.
- Aerospace will conduct engineering and development studies of structures, mechanisms, thermal protection systems, passive thermal control systems, and mechanical systems in order to advance the technology and capabilities of space vehicles.

6. Description of the efforts made to ensure that offers are solicited from as many potential sources as practicable, including whether a notice was or will be publicized as required by FAR 5.202:

In accordance with FAR 5.202(a) (10), this action, which is permitted by FAR 6.302-3(a) (2) (ii), is not required to be synopsized.

7. A determination by the contracting officer that the anticipated cost to the Government will be fair and reasonable:

The estimated cost of each contract will be determined to be fair and reasonable based upon a comparison with the existing Aerospace contracts with the USAF, as well as with many previous efforts performed by Aerospace for NASA. The cost of comparable engineering skills under other contracts and knowledge of salaries paid to engineering personnel in the aerospace community will be available for comparison. Before each contract is awarded, reasonableness of the cost will be further verified by analysis of certified cost and pricing data to be furnished by Aerospace under the Truth-in-Negotiation Act and by analysis by the cognizant Defense Contract Audit Agency of the direct and indirect costs rates proposed by Aerospace. After contract award, work will be authorized on an individual IDIQ task ordering basis. Cost proposals for tasks will be reviewed by the Contracting Officer Technical Representative (COTR) and negotiated by the Contracting Officer (CO) to obtain fair and reasonable costs.

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

Market research was not conducted because NASA's needs cannot be met in the commercial marketplace. Aerospace is the only organization and the only FFRDC that combines a broad integrated view of all U.S. space activities and a corporate space-based charter designed to provide objective support to the U.S. Government. It has been determined by NASA's technical experts that Aerospace is the only known entity that possesses the unique capabilities necessary to fulfill the Government's requirements.

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

Per FAR 35.017 (a) (2), it is not the Government's intent that a FFRDC use its privileged information or access to installations equipment and real property to compete with the private sector. An FFRDC is required to operate in the public interest with objectivity and independence and to be free from organizational conflicts of interest. The Sponsoring Agreement between the USAF and The Aerospace Corporation, dated November 12, 2008, re-establishes Aerospace as a FFRDC and specifically cites FAR 35.017-1(c)(4), which prohibits Aerospace from competing with private industry. Therefore, NASA is free to share sensitive information with FFRDCs to help further research.

Additional rationale for a sole source procurement of these special services is summarized as follows:

A. Freedom from Bias

Aerospace, a non-profit corporation, operates as a FFRDC for the USAF. Aerospace does not manufacture or otherwise sell any commercial hardware or software products, but specializes in providing objective engineering advice and analysis. Accordingly, independent assessments, evaluations and studies prepared by Aerospace will be objective assessments of NASA programs, which are not influenced by any predisposition toward any corporate product line or technical service or profit motive. A hardware or software producing company is likely to have predisposition towards its design or product line. This predisposition may influence that company's recommendations to the Government and may not result in a decision that is most advantageous for the program. Similar issues exist in evaluating particular manufacturing and management approaches. Where a company is subject to such influences in assessing large and complex programs, such bias is difficult to eliminate. Freedom from any organizational conflict of interest is an essential requirement, and Aerospace has demonstrated such freedom for the past 48 years.

B. Need for State-of-the Art Information from Government Laboratories and Universities

Independent assessment of NASA programs requires Aerospace's extensive knowledge of technology design, development and integration, as well as application of lessons learned from previous independent readiness reviews conducted by the USAF over the past 43 years. In addition, developing effective risk mitigation solutions and assessing program and project technical health will require drawing upon state-of-the-art information from other government laboratories and universities. Extensive working relationships have been established by Aerospace with such diverse organizations as Massachusetts Institute of Technology's Lincoln Laboratory, the Jet Propulsion Laboratory, the Department of Energy, and many others. No other known source can furnish the required knowledge base.

C. Need for Industry Proprietary Information

Proprietary designs and process data are very important to individual, for-profit contractors, and they are usually unwilling to share this information with their competitors. Aerospace has a unique capability and proven track record for successfully integrating and protecting proprietary information on multi-contractor programs. All contracts issued by the Air Force Space and Missile Systems Center Program Offices for which Aerospace provides systems engineering, integration, and/or independent peer review contain the "Aerospace Enabling Clause." This clause requires the contractors to provide Aerospace with access to all information necessary to complete its task. The clause also assures the contractors that their proprietary information will be appropriately safeguarded by Aerospace. All major U.S. space related industrial organizations have become comfortable working with Aerospace on their programs. The NASA contract will include appropriate clauses to include Access to Sensitive Information and Release of Sensitive Information.

D. Need for Extensive Background Information:

The contemplated work requires drawing heavily on previous experience and background information which only Aerospace is known to possess. As a major assessor of the military programs since 1960, Aerospace possesses unique levels of background information and experience that may be applied to the independent assessment, evaluations of and studies of a variety of existing and future NASA programs. A large and diverse kit of engineering and analysis tools are available within Aerospace for use in conducting assessments, evaluations and studies of a variety of NASA programs. This tool kit consists of models, simulations and databases developed and evolved over the past forty-three years: it covers such diverse disciplines as astro-dynamics, nanotechnology, communications and orbit operations. In the 14 major discipline areas, some 135 databases and other tools are available for use in assessing NASA programs. The Aerospace engineering toolkit is constantly evolving by being added to and improved. Aerospace also has had responsibility on behalf of the USAF for testing, evaluation, verification, and validation of hardware used by the USAF.

10. Sources, if any, that expressed an interest, in writing, in the acquisition:

As stated in number 6 above, the requirement will not be synopsisized. Therefore, no sources expressed an interest in writing, in the acquisition.

11. The actions the Agency may take to remove or overcome any barriers to competition before any subsequent acquisition for the supplies or services required:

FFRDCs provide a noncompetitive environment that ensures complete access to Government data; whereas, a competitive environment would not allow this accessibility. FFRDCs have access to Government and supplier data, including sensitive and proprietary data, and to expertise and state-of-the-art facilities beyond that which is common to the normal contractual relationship. Aerospace is an FFRDC per statute. Congress would need to remove this designation to permit competition.

JOFOC Signature Page for the Consolidated Aerospace Corporation Initiative

TECHNICAL DIRECTORATE:

I certify that the facts presented in this justification are accurate and complete.

Bruce Mark
Signature

8/25/09
Date

CONTRACTING OFFICER:

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

E. Ann Hance
Signature

8-25-09
Date

PROCUREMENT OFFICER:
(CONCURRENCE)

Thom S. Dale
Signature

10/16/09
Date

GSFC COMPETITION
ADVOCATE:
(CONCURRENCE)

Arthur F. [Signature]
Signature

10/19/09
Date

DIRECTOR FOR HEADQUARTERS
OPERATIONS:
(CONCURRENCE)

Christopher P. [Signature]
Signature

1/8/2010
Date

NASA COMPETITION
ADVOCATE:
(CONCURRENCE)

James W. Goddard
Signature

2/1/10
Date

Assistant

ASSOCIATE ADMINISTRATOR
FOR PROCUREMENT:
(APPROVAL)

[Signature]
Signature

2/1/10
Date

National Aeronautics and
Space Administration

Headquarters
Washington, DC 20546-0001



January 29, 2010

Office of Procurement

TO: Goddard Space Flight Center (GSFC)
Attn: 200/Associate Director of Procurement

FROM: LH/Assistant Administrator for Procurement

SUBJECT: Justification for Other than Full and Open Competition (JOFOC) for agency-wide contracts with Aerospace Corporation for Specialized Engineering, Evaluation, and Test Services (SEETS)

The subject JOFOC was forwarded to Headquarters (HQs) for review and approval pursuant to FAR 6.304 and NASA FAR Supplement 1806.304-70.

Based on HQs review, the JOFOC is approved. The HQs point of contact for this action is Donald L. Moses, Program Operations Division. Mr. Moses can be reached at 202-358-1789.


William P. McNally

Enclosure