NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GEORGE C. MARSHALL SPACE FLIGHT CENTER

LIMITED-SOURCES JUSTIFICATION

I recommend that NASA George C. Marshall Space Flight Center negotiate with Science Applications International Corporation (SAIC) only for integrated vehicles design and analysis support.

The proposed procurement is a follow-on to the efforts SAIC is currently providing to MSFC under task orders NNM11AA26T and NNM11AA27T issued against the MSFC's Specialized Engineering and Project Support (SEPS) Blanket Purchase Agreement (BPA) NNM06AA12Z. This action serves as an extension of the requirements under these task orders to align with the planned award of the follow-on contract for the Center's engineering support services efforts. The current task orders are Time and Materials (T&M) contractual arrangement and no work will be authorized unless determined to be beneficial for planned Space Launch Systems (SLS) requirements. Approval of this action will provide continuation and stability of these critical skills provided by SAIC during this recompetition period.

The combined total estimated ceiling amount of the proposed orders is $120,000 and the estimated period of performance or lead-time for delivery is approximately 2 months through July 31, 2012.

This acquisition will be conducted under the authority of the Multiple-Award Schedule (MAS) Program in accordance with Title III of the Federal Property and Administrative Services Act of 1949 (41 U.S.C. 251, et seq.) and Title 40 U.S.C. 501, Services for Executive Agencies. Accordingly, it is proposed that an order for the required supplies or services be placed under Blanket Purchase Agreement (BPA) NNM06AA12Z issued against the contractor's General Services Administration (GSA) Federal Supply Schedule (FSS) Contract GS-23F-0107J.

This recommendation is made pursuant to FAR 8.405-6(a)(1)(i)(B) which authorizes limiting the number of sources from which the government may place orders for supplies or services from GSA FSS contracts when a Limited-Sources Justification (LSJ) has been approved demonstrating that only one source is capable of providing the supplies or services required at the level of quality required because the supplies are unique or highly specialized.

The circumstances limiting consideration to one GSA FSS source are as follows:

1. SAIC is uniquely positioned to continue providing support to MSFC with their proprietary visualization application, bdStudio, which is used in the System Integration Lab (SIL). This application has been part of the SIL configuration for over four years. Therefore, if this capability was lost the time to acquire and train personnel to use a new real-time visualization tool would significantly impact the efficiency and effectiveness of the SIL. The bdStudio visualization is also used to support the Flight Systems Team for simulation and real-time test support. This capability has been part of the Flight Systems Team effort for over two years. Therefore, if this capability was lost the time to acquire and train personnel to use a new visulation tool would significantly impact efficiency and effectiveness of the Flight Systems Team. bdStudio is used for real-time visualization during real-time simulations.

2. Marshall Aerospace Vehicle Representation in C (MAVERIC) is a high-fidelity aerospace vehicle simulation tool developed in house by a combination of civil servants and a limited number of support contractors including SAIC personnel. MAVERIC work requires personnel to maintain security clearances up to the level of Secret and Top Secret/SCI in order to work in secure areas and access and/or generate classified information. SAIC personnel were instrumental in the development of the MAVERIC

X-37 ALTV simulation tool and the subsequent mission success analysis performed prior to each of the three X-37 ALTV Atmospheric Drop Test Flights. SAIC personnel were instrumental in carrying the MAVERIC modeling and simulation support into ongoing Flight Systems Team tasks. Due to limited civil servant engineering resources, SAIC engineering support will be required to update or modify the MAVERIC models and simulations in support of these tasks.

3. SAIC personnel are the sole designers and developers - with significant technical insight from MSFC engineering civil servants - of a suite of engineering analysis software consisting of a complementary pair of MATLAB/Simulink tools, Stability Aerospace Vehicle ANalysis Tool (SAVANT) and Frequency Response Analysis and Comparison Tool Assuming Linearity (FRACTAL), which are Coupled Stability Analysis and Control Design Tools which are the primary integrated launch vehicle analysis resources for stability assessment and control design optimization during design and verification. These complex models require significant knowledge of control systems and vehicle dynamics to maintain and update. This software is used for stability analysis, trajectory simulation, control design optimization, sensitivity analysis, and frequency- and time-domain Monte Carlo analysis.

4. TREETOPS is a multi-body dynamic time domain simulation and analysis tool that was developed in-house at MSFC and has a limited distribution outside the MSFC engineering community. SAIC personnel have expertise experience with TREETOPS supporting various programs and projects for over 10 years. SAIC has a significantly modified version of TREETOPS that they use to support advanced features which have direct applicability to current MSFC programs. These features include contact dynamics, nonlinear (frangible) springs for separation analysis, generalized aerodynamics, water impact forces/moments, advanced controller features, and visualization post-processing.

5. It is advantageous for MSFC to have ready access to the services of SAIC personnel during this transition period. SAIC personnel possess a steadfast understanding of technology needs, requirements, and expertise through previous efforts in these fields, including their support of the Crew Exploration Vehicle in its critical definition phase, Marshall Avionics System Test Lab, the Flight Robotics Lab, the Contact Dynamics Simulation Lab, the Space Launch Initiative program, the Solid Rocket Booster (SRB) project, and the Flight Systems Team. These skills are assets to MSFC should direction be given by the Agency to proceed on future launch vehicles.

Pursuant to FAR 8.404(d), “GSA has already determined the prices of supplies and fixed-price services, and rates for services offered at hourly rates, under schedule contracts to be fair and reasonable. Therefore, ordering activities are not required to make a separate determination of fair and reasonable pricing, except for a price evaluation as required by 8.405-2(d),” which states, “The ordering activity is responsible for considering the level of effort and the mix of labor proposed to perform a specific task being ordered, and for determining that the total price is reasonable.”

Market research among the other MSFC BPA holders was not conducted since this effort represents continuation of effort that must be completed with the same expertise and without interruption to support current program schedules.

Due to the need for this requirement to continue without interruption and with the same expertise, there are no known actions which the agency may take to remove or overcome barriers to competition at this time. However, this effort will become part of the ESSSA task order contract award.

For the above reasons, competition among the FSS holders is not feasible. Therefore, purchase of the services from SAIC is the only practical approach.

I hereby certify that the facts in this justification and any supporting data which form the basis for this justification are complete and accurate.

/s/ Original signed by | 05/16/2012

PJ Morton
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Spacecraft and Vehicle Systems Department
EV42

Date

I hereby certify that this justification is accurate and complete to the best of my knowledge and belief. In addition, I hereby determine that the anticipated total price of the order will be reasonable and that the resulting task order represents the best value to the Government consistent with FAR 8.404(d).

/s/ Original signed by | 05/17/2012

David A. Iosco
Contracting Officer
Manager, Engineering Support Office
Office of Procurement

Date