

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

JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION (JOFOC)
PURSUANT TO TITLE 10 U.S.C. 2304 (C) (1)

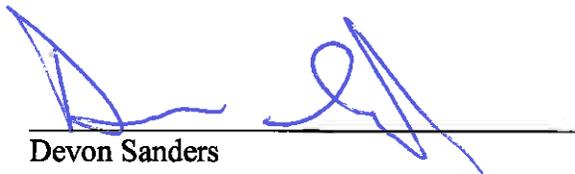
1. This document is a Justification for Other Than Full and Open Competition (JOFOC) prepared by the NASA Marshall Space Flight Center (MSFC) in accordance with Federal Acquisition Regulation (FAR) Part 6.3, Other Than Full and Open Competition, and NASA FAR Supplement (NFS) Part 1806.3, Other Than Full and Open Competition.
2. Nature and/or description of the action being approved: Purchase of Blue Canyon Technologies Reaction Wheel Module with Torque Rods included and Drive Control Electronics for the Iodine Satellite (iSAT) Guidance Navigation and Control (GN&C) system.
3. Description of the supplies or services required to meet the agency's need, including estimated value: Reaction Wheel Module (RWM) and Drive Control Electronics to support iSAT flight unit with engineering support to demonstrate and validate Hall Effect Thruster for low earth orbit and deep space cubesat missions. The total estimated cost of this effort is \$174,000.
4. Statutory authority permitting other than full and open competition: This recommendation is made pursuant to FAR 6.302-1, which implements the authority of 10 U.S.C. 2304(c)(1) for acquisition of supplies or services from only one source and no other supplies or services will satisfy agency requirements, full and open competition need not be provided for.
5. A demonstration that the proposed contractor's unique qualifications or the nature of the acquisition requires the authority cited: This Reaction Wheel Module with Torque Rods is compatible with iSAT because the reaction wheels included in this module (RWp100) meet both the GNC momentum budget requirements of greater than 70 mNm while staying within the 10 cm x 10 cm x 10 cm constraint of the mechanical designers. No other product can meet these requirements. The incorporation of torque rods into the Reaction Wheel Module reduces additional cost and schedule impacts to the project since the project will not have to allocate additional space for the torque rods. The Drive Control Electronics are specifically designed to control the aforementioned reaction wheels. No other drive control electronics are compatible with the Blue Canyon Technologies DCE. They also control the torque rods which reduces additional development efforts and saves the project cost and schedule impacts.
6. Description of the efforts made to ensure that offers are solicited from as many potential sources as practicable: Pursuant to NFS 1805.207 and 1804.570, the proposed contract

action will be published on the NASA Acquisition Internet Service (NAIS) and pursuant to FAR 5.201, placed on the Federal Business Opportunities website (FedBizOpps). The results received in writing will be added to this document by addendum.

7. A determination by the contracting officer that the anticipated cost to the Government will be fair and reasonable: Based on established market prices.
8. Description of the market survey conducted, and the results, or a statement of the reasons a market survey was not conducted: A market survey was completed and the survey found no other vendors are able to provide a reaction wheel with similar momentum capabilities 100 milliNewton-meter-seconds (mNms) at the same volume and weight. There are wheels available with lower momentum capabilities (30 – 60 mNms), but these do not meet the Government momentum requirements. The next larger wheel option has 120 mNms of momentum, but the volume is 5x larger and mass is 2x greater. This is not suitable due to project constraints on volume and mass.
9. Other facts supporting the use of other than full and open competition, such as: The Drive Control Electronics are required to operate the Reaction Wheels. The DCE is also able to control Torque Rods, so combining the Torque Rods and Reaction Wheels into a single Reaction Wheel Module saves the project money and schedule since the project will not have to find additional volume or electronics to support Torque Rods separate from this package. Since this is all flight hardware, spares and engineering development units of the Reaction Wheels and Torque Rods are required for developmental testing and risk assessments.
10. Sources, if any, that expressed an interest in writing in the acquisition: See addendum
11. The actions, if any, the Agency may take to remove or overcome barriers to competition before any subsequent acquisition for the supplies or services required: There are no known actions which the Agency may take to remove or overcome barriers to competition before any subsequent acquisition for the supplies required.

For the above reasons, full and open competition is not feasible. Therefore, purchase of the supplies or services from Blue Canyon Technologies is the only practical approach.

I hereby certify the facts in this justification and any supporting data used for this justification are accurate and complete to the best of my knowledge.



Devon Sanders
iSAT GN&C Lead
Guidance, Navigation & Mission Analysis Branch

7/8/15
Date

I hereby certify that the above justification is complete and accurate to the best of my knowledge and belief. In addition, I hereby determine that the anticipated cost to the Government will be fair and reasonable.

Contracting Officer
Joseph L. Eversole
Office Chief, Engineering Programs and
Systems Support Office

Date

Approved:

Contracting Officer
James W. Bailey
Office Manager, Engineering Support Office

Date