

BRAND NAME JUSTIFICATION ORDER (\$3,000 to SAT)

1. The service or material listed on N6313417RC002AD is a limited source action to be awarded as an order and/or modification of as identified in paragraph (2) below. The placement of a firm, fixed price order is anticipated.

2. **Limited to the following source(s).** Altair is the manufacturer. (If a sole source manufacturer distributes via dealers, *ALSO* provide dealer information.)

Manufacturer: *Altair*

FSS nr: 70

Manufacturer POC & phone nr: *100 Mathilda Place, 6th Floor Sunnyvale, CA 94086 650-988-9700*

Dealer / Rep: *Altair Engineer, Inc. 1820 E Big Beaver Rd Troy, MI 48083*

Dealer FSS #:

Dealer / Rep address / phone nr. *Victor Wright / 801-360-1564*

3. **Identification of the justification rationale.** The statutory authority permitting other than full and open competition is title 10 U.S.C. 2304(c)(1), Simplified Acquisition Procedures, as implemented by FAR 13.106-1(b)(1)(i).

The brand name storage components being supported are proprietary to the manufacturer. FLENUMMETOCCEN personnel are trained and have developed specialized expertise working with PBS components currently integrated in its HPC environment. FLENUMMETOCCEN has made a substantial investment of both equipment and applications training to achieve the current state of operational capability and functionality. This procurement will provide support for the existing computing infrastructure. While Altair and PBS Professional are normally sold through resellers and via the GSA FSS Schedules, this specific iteration of PBS Professional is a modified version designed specifically for the FLENUMMETOCCEN computing environment. As a result, it is only available from the OEM.

4. **Description of the item or service required, statement that the requested material or service represents the minimum requirements of the government, the estimated cost, and required delivery date or performance period.**

Portable Batch System (PBS) Professional is a single, on-demand computing environment that intelligently schedules applications onto multi-core based infrastructures, maximizing return on computing capital investments. This batch scheduler optimizes the utilization of the service-oriented architecture High Performance Computing (HPC) Linux clusters at FLENUMMETOCCEN. The job control on these supercomputers will not work without this software.

PBS Pro is the enhanced commercial version of PBS, originally developed from NASA to meet the needs of distributed parallel support which was lack in the first generation queuing batch systems, the Network Queuing Systems (NQS).

The current support will expire on 9/30/2016. This acquisition is to renew the maintenance and support of existing PBS software license renewals. The estimated cost is [REDACTED]

5. **Specific characteristics of the material or service that limit the availability to this/these source(s) (unique features, function of the item, etc.). Describe in detail why only this/these suggested source(s) can furnish the requirements to the exclusion of other sources. Provide a**

description of the market research conducted among schedule holders and the results OR a statement of the reason market research was not conducted.

PBS Pro software application is already installed at FLENUMMETOCCEN. FLENUMMETOCCEN's supercomputers (nodes, switches, disks, associated components, software, etc.) are at the heart of its mission-critical operational capability. Substantial technical research and system testing has been conducted before selection of the installed software. Command personnel are trained and have developed specialized expertise working with PBS pro, which are currently integrated within its HPC environment. FLENUMMETOCCEN must purchase license renewals to continue use of these applications. The maintenance and support of this storage solution can only be purchased through Altair its authorized resellers.

The requiring activity has reviewed competing Distributed Resource Management Systems (D-RMS) such as Platform Load Sharing Facility (LSF), Sun Grid Engine (SGE), IBM Load Lever, and Condor. However, compared with LSF, PBS architecture keeps the minimum necessary daemons in the installation. On the master host, which is called server host in PBS, only pbs server and pbs sched are installed, responsible for answering user request and scheduling. On the execution host, pbs mom is the only daemon taking care of job launching, enforcement of site policies and managing physical resources.

PBS Pro supports all the general policies in scheduling, such as FIFO, user or group priority-based, fareshare, preemptive and backfilling. By default, jobs in the highest priority queues will be considered for execution before jobs from the next highest priority queue; but it is configurable as a round-robin fashion that queues will be cycled through attempting to run one job from each queue. There are two types of queues, routing and execution. A routing queue is used to move jobs to other queues including those that exist on the different PBS servers. A job must reside in an execution queue to be eligible to run and should remain in an execution queue during the time it is running.

Without these licenses and the subsequent loss of use of PBS Pro, the Fleet's ability to meet its mission requirement will be compromised because this software is required for the command and control of HPC operations that produce and deliver weather and oceanographic prediction information to deployed Navy forces. These products assure safety of ship transits and flight operations as well as effectiveness of weapons systems.

6. Other information to support a limited source buy:

The cost to modify and re-integrate all of the hardware and software currently running on the current Information Architecture hardware is greater than the cost of this maintenance. Other alternative solutions would require re-engineering, integration, testing, re-certification and evaluation of the proposed supercomputer storage system and create a significant duplication of cost. The cited brand name software and support is essential to the Government's requirements, thereby precluding consideration of a product manufactured by another company.

Navy and Marine Corps policy requires all software applications to be registered in DADMS and approved by the appropriate FAM (see NAVADMIN 124/05 and MARADMIN 226/04). No software application is authorized to operate on DON networks unless it is registered in DADMS and designated "Approved" or "AWR" by the appropriate FAM. The associated hardware and software supported by this requirement is DADMS registered and approved. All components are registered with FLENUMMETOCCEN in the DON Application and Database Management System (DADMS) and METOC Application Architecture Database (MAAD), installed and operational. FLENUMMETOCCEN's supercomputer suite reflects an investment of several million dollars.

7. TECHNICAL OR REQUIREMENTS CERTIFICATION:

I CERTIFY THAT THE FACTS AND REPRESENTATIONS UNDER MY COGNIZANCE WHICH ARE INCLUDED IN THIS JUSTIFICATION, WHICH FORM A BASIS FOR THIS JUSTIFICATION, ARE COMPLETE AND ACCURATE.

TECHNICAL COGNIZANCE

[Redacted Signature]

(Signature) (Title) (Code) (Phone) (Date)

[Redacted Signature]

(Signature) (Title) (Code) (Phone) (Date)

8. CONTRACTING OFFICER

[Redacted Signature]

Date 10/14/2016