

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				I. CONTRACT ID CODE J	PAGE OF PAGES 1 5
2. AMENDMENT/MODIFICATION NO. 0001	3. EFFECTIVE DATE 29-Mar-2006	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)		
6. ISSUED BY USACE, CONTRACTING DIVISION ATTN: CEMVN-CT, ROOM 172 7400 LEAKE AVE. NEW ORLEANS LA 70118-3651		CODE W912P8	7. ADMINISTERED BY (If other than item 6) See Item 6		
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)				X	9A. AMENDMENT OF SOLICITATION NO. W912P8-06-T-0055
				X	9B. DATED (SEE ITEM 11) 17-Mar-2006
					10A. MOD. OF CONTRACT/ORDER NO.
					10B. DATED (SEE ITEM 13)
CODE		FACILITY CODE			
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS					
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input checked="" type="checkbox"/> is extended, <input type="checkbox"/> is not extended. <p>Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.</p>					
12. ACCOUNTING AND APPROPRIATION DATA (If required)					
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.					
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.					
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).					
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:					
D. OTHER (Specify type of modification and authority)					
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.					
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) The purpose of this amendment is to make changes to the Statement of Work paragraph 2.1 Hardware as well as answer Questions that have been brought up regarding the Statement of Work. The Questions and Answers are attached. This new information will cause the solicitation expiration date to be amended to now have quotes due no later than 2:00pm CST on April 7, 2006.					
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.					
15A. NAME AND TITLE OF SIGNER (Type or print)			16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)		
			TEL: _____ EMAIL: _____		
15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)		16C. DATE SIGNED 29-Mar-2006	

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION SF 1449 - CONTINUATION SHEET

SOLICITATION/CONTRACT FORM

The required response date/time has changed from 03-Apr-2006 02:00 PM to 07-Apr-2006 02:00 PM.

The following have been added by full text:

QUESTIONS AND ANSWERS 1

Questions and Answers 1

Question: Can this work be performed at the contractor's place of business or only in Louisiana?

Answer: The work may be performed at any location with the capacity to connect and send information to Vicsburg as per the specifications.

Question: Does the contractor need to purchase the ADCIRC MPI license?

Answer: No

Question: What OS, compiler or MPI and their versions are preferred?

Answer: The software is configured to run on many platforms, so no preferred OS or compiler. MPICH (at least version 1) or higher preferred MPI implementation.

Question: Would a *NIX based grid be acceptable? Is there a recommended platform?

Answer: No recommended platform.

Question: It's stated that 'each node in the system needs a minimum of 8 GB RAM and a performance of at least 60 GFLOPS.' Is this correct? I believe that the grid of computers must provide 60 GFLOPS as a whole.

Answer: Yes, 60 Gflops as a whole.

Question: What is the uptime requirement?

Answer: 24/7

Question: Is there a spec for a minimum committed information rate between the contractor and the customer?

Answer: No

Question: Is there a spec for the node to node communications?

Answer: No

Question: Do two processors in the same node count as two processors for the hardware requirements or is 60 GFLOPS the driving requirement?

Answer: Two processors in the same node count as two processors.

Question: Will the processors be counted or will the 60 GFLOPS be benchmarked, and if so, what test suite is to be used?

Answer: The system will not be benchmarked, the processors will be counted.

Question: For the 'Secure file transfer requirement', what type of encryption is required?

Answer: SSH version 2 protocol

Question: Will there need to be regular on-site secure access at the grid location by government personnel?

Answer: No, only periodic site visits.

Question: What kind of disposal will be required once the data is provided in a final delivery?

Answer: All software and data sets must be erased from the system and drives. If the drives cannot be erased they must be shredded.

The following have been modified:

STATEMENT OF WORK

STATEMENT OF WORK
High Performance Parallel Computation Requirements
U. S. Corps of Engineers, New Orleans

1.0 Introduction

1.1 Organization

U.S. ARMY CORPS of ENGINEERS
MISSISSIPPI VALLEY DIVISION, NEW ORLEANS DISTRICT (CEMVN)
PPPMD-PM-W
P.O. BOX 60267
NEW ORLEANS, LA 70160

1.2 Background

The New Orleans District has an urgent need for the large computing power available on supercomputer systems or clusters of parallel processors to run the ADvanced CIRCulation (ADCIRC) hydraulic model. The model is used to simulate various hurricane intensities and paths to determine the required levee heights for hurricane protection projects in the New Orleans District as well as provide information for the 1% chance hurricane still water elevations and their relationship to levee heights.

ADCIRC is a system of computer programs for solving time dependent, free surface circulation and transport problems in two and three dimensions. These programs utilize the finite element method in space and therefore can be run on highly flexible, irregularly spaced grids. The grid that will be used is very large. Presently, it is comprised of over 700,000 plus nodes and will be expanded to over 1,000,000 nodes. This large grid requires a computer with multiple processors running in parallel. The computer simulation of a particular hurricane track also produces extremely large output files.

In the past, runs have been made on the Cray X1 at the High Performance Computing Center in Vicksburg, MS using 128 processors. The problem facing the District is that of wait time in batch queues, as well as the transfer rate for the large output files is very slow, resulting in a very long wait to obtain the results of the simulation. This lapse has a significant impact on the number of simulations that can be performed during a given work period. Time delays are also caused by time spent in wait queues without immediate job execution upon submission.

1.3 Objectives

The objective is to use a high performance system that can provide quick execution of jobs with no wait time, as well as fast computation capabilities to increase the number of model simulations that can be performed during a work period. As a result of Hurricanes Katrina and Rita, CEMVN has been requested by FEMA to provide updated Stillwater elevation data in an expedited manner. Due to the major implications on redevelopment of the New Orleans Metropolitan Area, FEMA has requested this data by early 2006. In order to meet the requested deadline, CEMVN must procure additional high performance computer system access. After a review of available DoD resources, it has been determined that procurement for outside DoD is necessary.

2.0 Information Technology Cluster Requirements

2.1 Hardware.

A high performance parallel computational or clustered system capable of execution of ADCIRC is required. The system must have available a minimum of 128 processing elements immediately available for ADCIRC executions. The system must have equivalent or faster computational speed to the IBM eServer pSeries p5 575 1.9 GHz systems, and a high-speed interconnect network, either a Federation, Myrinet or equivalent. Gigabit Ethernet or faster data transmission rates is mandatory. Total system performance must be equal or above 3.0 TFlops/s. Additionally, a minimum of 300Gb working disk space is required.

2.2 OS and Software

High Performance FORTRAN, C/C++ compilers and MPI plus a job submission and management system are required.

2.3 System access

Access must be provided to New Orleans District personnel by both secure terminal connections and on-site workstations. Secure file access and transfer is also required. The contractor will grant the New Orleans District top priority or exclusive access in the allocation of computing nodes and resources. The contractor may restrict the District allocation of all nodes with a 48-hour advance notice.

3.0 Technical Requirements

3.1 Tasks

The contractor shall provide a high performance parallel computer system with hardware and software as identified in Para. 2.0, a password-protected account shall be provided to the Technical Point of Contact at the New Orleans District. Contractor services shall include all aspects of computer systems administration related to execution of the ADCIRC software. These include but are not limited to priority scheduling, resource allocation, and system access. The contractor must be able to competently compile, and execute the ADCIRC code.

3.2 Deliverables

The contractor must provide sufficient capability for the physical transfer of all results of model executions to the New Orleans District Personnel situated at the U.S.Army Corps of Engineers, Engineering, Research, and Development Center (ERDC), Vicksburg, MS within one (1) hour of completion. Access must be provided through secure file transfer with at least 256 Mb/sec bandwidth and by allowing District personnel to retrieve results burned to CDROM or DVD media.

3.3 CPU Node-hours

The contractor shall provide the District a minimum of 60,000 CPU Wall-hours. The estimated computing will be over three to four months.

(End of Summary of Changes)