NASA Kennedy Space Center
Sole Source Justification

PR #: 4200514688

Items: Annual Maintenance Plan (2 Years), Professional Edition for CFD++Compressible Real (CR) Gas Version (1 Serial and 6 Parallel Processing Licenses) & CFD++ Eulerian Dispersed Phase (EDP) Add-on Module (1 Serial and 6 Parallel Processing Licenses)

Brand Name: Metacomp Technologies

NASA, John F. Kennedy Space Center, will negotiate with Metacomp Technologies for the acquisition of Annual Maintenance Plan(including Technical Support and software upgrades), Professional Edition for CFD++CR and CFD++ EDP Add-on Module. Metacomp Technologies is the developer of the software (CFD++CR and CFD++ EDP Add-on Module) that is currently in use and has been used by NE-M1, Engineering Design Analysis Branch.

Pursuant to FAR 13.106-1(b) and 13.106-3(b)(3)(i), the acquisition of referenced supplies or services are determined to be available from only one source. Competition is impractical for the following reasons:

Metacomp Technologies is the only known source for the required Annual Maintenance Plans and the required Technical Support and software updates. The CFD++ software is used to solve many complex problems and perform numerical simulations. NE-M1 is required to perform thermal and fluids analyses, including Computational Fluid Dynamics, in support of the Space Launch System (SLS) Program Ground Support Equipment and Facilities. NE-M1 is required to solve highly unique problems which include supersonic, multiphase, multispecies flow of rocket exhaust plumes into flame trenches, analysis of wind loads on launch structures, aeroacoustic analysis of rocket plumes, and a variety of other complex problems. Use of the CFD++ software has resulted in NE-M1 efficiently solving compressible and incompressible flows at all Mach numbers, including both single and multi-species treatment, multi-phase, steady, and unsteady flows. The Metacomp Technologies CFD++ software is based on unified grid, unified physics and unified computing methodology in an advanced numerical discretization and solution framework.

Market Research was recently performed in May of 2014. Conferences and telecons are attended all year around. Searches are also performed on the internet yearly to see if any comparable software has been developed that could be used by NE-M1. Based on the Market Research performed, there are no other known software developers that sell software that is fully comparable and compatible to Metacomp's CFD++ software. Therefore, there is no other known source that can provide the required Annual Maintenance Plan that NE-M1 requires.

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

Roger MacLeod
Contracting Officer

7/9/2014
Date