

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
GLENN RESEARCH CENTER (GRC)  
CLEVELAND, OHIO

JUSTIFICATION FOR AN EXCEPTION TO FAIR OPPORTUNITY

PR4200456360

**I. Description of Requirement**

I recommend that GRC issue a task order on a noncompetitive basis to General Electric Aviation (GEA) under Contract Number NNC10BA06B, through Task Order Number NNC13TA07T, for design, fabrication, and delivery of a baseline front block and an improved blading front block of a 9X class compressor. A 9X class compressor is defined as a 30:1 core compressor with a meanline blade loading of better than 0.52. NASA will test this compressor to determine performance and operability of the baseline and improved compressor against the Environmentally Responsible Aviation (ERA) Phase 2 fuel burn goals.

The estimated value of this requirement is \$8,500,000, and it is anticipated that a cost-share arrangement will be negotiated with GEA under Task Order Number NNC13TA07T. Consequently, the Government's share for this task order is estimated at \$3,500,000 under this resulting cost-share task order. Purchase Request Number 4200456360 in the amount of \$100,000 has been issued for this task order as initial funding for Fiscal Year 13.

**II. Statutory Basis for Exception to Fair Opportunity**

The statutory exception permitting other than fair opportunity is:

10 USC 2304 c (b) (2); FAR 16.505(b) (2) (i) (B)

Only the aforementioned contractor is capable of providing the necessary supplies or services at the level of quality required because the supplies or services are unique or highly specialized.

**III. Rationale In Support of Statutory Authority**

The GEA is the only U.S. company developing highly-loaded compressor front-block technology for the 777 or next generation aircraft of interest to the ERA project. As such, GEA is uniquely positioned to provide the front block of a 9X class compressor for testing at NASA GRC on this topic under the ERA Phase 2 project. Further, GEA has a need to build such a compressor and test the aerodynamic performance and operability of such a compressor within the parameters of ERA Phase 2, and through discussions with NASA, has indicated a willingness to provide this compressor to NASA for testing. NASA will benefit greatly from this cooperative and cost-share arrangement as the ERA project does not have sufficient funds to fully fund the design and fabrication of similar hardware.

Secondly, some of the adaptive hardware that was built for Phase 1 testing will be reused in Phase 2 providing additional cost savings to the Government. Finally, a Request for Information was issued on this topic under the ERA Phase 2 project in March of 2012, and only GEA replied back with interest in providing a front-block compressor for testing by NASA.

#### **IV. Determination of Fair and Reasonable Cost**

The contractor will be required to submit adequate cost support data, and an analysis will be performed to determine the costs as fair and reasonable.

#### **V. Actions to Remove or Overcome Barriers to Competition**

Core turbomachinery research is an inherently competitive arena among a small group of engine companies. The various engine companies have tended to specialize in different parts of the engine; the GEA's recent focus has been on the compressor front block, while other companies focus more on the rear stages of the compressor. The understanding and improvements resulting from this front-block compressor task will be publicly available subject to time delay, which is a 5-year holdback on the experimental data in an unprocessed form providing benefits both to the Government and the U.S. industry and improving competition.