

W56HZV-05-R-BAA1 Topic #27

Added by Amendment 0067, issued 08 February 2012

Revised by Amendment 0069, 08 March 2012

Revised by Amendment 0070, 09 March 2012

Revised by Amendment 0071, 28 June 2012

Revised by Amendment 0072, 21 August 2012

Revised by Amendment 0073, 21 September 2012

Revised by Amendment 0074, 31 October 2012

Revised by Amendment 0075, 21 November 2012

Topic #27: Next Generation Combat Engine

1. **OBJECTIVE:**

Under this topic, the Government invites proposals to explore the further development of an advanced next generation combat specific high power density, high efficiency, lower heat rejecting, multi-fuel capable engine. The most important technical considerations of this topic will focus on high power density, minimal heat rejection and a scalable engine family building block.

The Government desires a scalable, modular technology for development of military family of engines for combat and tactical applications. The engine design must be compatible, reliable and durable with military fuels (JP-8, JP-5, Jet A, and high sulfur diesel fuel-2 (DF-2)). The successful offeror is required to utilize a scalable engine family design to maximize value to the Government and military vehicles.

Under this contract, the successful offeror will be required to deliver one (1) prototype engine. The Government intends to award one (1) contract with the available funding.

2. **PROGRAM DESCRIPTION:**

This announcement seeks to develop and demonstrate a novel high power density, low heat rejection, fuel efficient engine concept that will be researched to provide solutions for combat and tactical military vehicle programs. The long-term modernization power needs of the U.S. military will be addressed through the development of a modular and scalable high power engine to meet future Army combat vehicle needs. The next generation combat engine developed under this topic shall meet the following performance parameters:

- Compression ignition, reciprocating piston engines
- Modular Design: Scalable family concept
- Power output range (per module): = 200 - 300 hp
- Power density: ≥ 70 hp/l per cylinder displacement
- Best fuel consumption: < 0.36 lb/hp-hr
- Heat rejection to coolant and intercooler: ≤ 30 BTU/hp-min
- Runs on military grade fuels (JP-8, JP-5, Jet A, and high sulfur diesel fuel-2 (DF-2))
- The final prototype engine does not have to conform to any U.S. emissions standards

The demonstration portion of this effort shall include:

- Testing and evaluation of the scalable engine prototype performance while operating on DF-2 and JP-8 or Jet A.

W56HZV-05-R-BAA1 Topic #27

Added by Amendment 0067, issued 08 February 2012

Revised by Amendment 0069, 08 March 2012

Revised by Amendment 0070, 09 March 2012

Revised by Amendment 0071, 28 June 2012

Revised by Amendment 0072, 21 August 2012

Revised by Amendment 0073, 21 September 2012

Revised by Amendment 0074, 31 October 2012

Revised by Amendment 0075, 21 November 2012

- Testing and evaluation of the prototype to demonstrate the specific heat rejection of the prototype engine.
- Testing and evaluation of the prototype to demonstrate the power density.
- Testing of a prototype engine over a 50 hour AEP-5 NATO durability test with JP-8 fuel.

The Contractor shall develop and deliver a technical report on the developed modular prototype engine at the end of the contract to demonstrate the feasibility of continuing the scalable engine maturity development.

The Contractor shall conduct a prototype demonstration and deliver the prototype engine to the Government no later than thirty-six (36) months after contract award.

3. PROJECT DURATION, ESTIMATED MAXIMUM FUNDING AVAILABLE AND AWARD QUANTITY:

Period of Performance: The scope of this effort is such that we anticipate a potential duration of thirty-six (36) months (Fiscal Year (FY) 2012 to 2014).

Funding: The overall total value for this topic is estimated at \$4.9M. The total maximum Government funding estimated to be available in FY12 is \$1,523,000. Yet to be appropriated, the budgetary estimate for FY13 is \$1,743,000 and for FY14 is \$1,633,000. Funds which are not expended in a given FY are available in the subsequent years of the project, subject to fund type restrictions.

Cost Ceiling/Cost Share: Proposed projects with costs to the Government exceeding the total maximum amount overall and per FY, identified immediately above, will be determined unaffordable. The contractor may propose costs in excess of the Government funded cost ceilings only if the excess costs are to be funded by a cost sharing arrangement. Please note that a cost sharing arrangement is not a consideration for award; therefore, no evaluation preference will be given if a cost share is proposed.

Single Award: The Government anticipates awarding one (1) contract as a result of Topic #27.

4. MILESTONE SCHEDULE:

Informal Talks Timeframe: 08 February 2012 through 08 March 2012

W56HZV-05-R-BAA1 Topic #27

Added by Amendment 0067, issued 08 February 2012

Revised by Amendment 0069, 08 March 2012

Revised by Amendment 0070, 09 March 2012

Revised by Amendment 0071, 28 June 2012

Revised by Amendment 0072, 21 August 2012

Revised by Amendment 0073, 21 September 2012

Revised by Amendment 0074, 31 October 2012

Revised by Amendment 0075, 21 November 2012

Electronic Copies of Proposals Due: Proposals will be accepted 09 March 2012 through 09 April 2012. Proposals must be received no later than 3:00 P.M. Eastern Daylight Time (EDT) on 09 April 2012.

***Note:** In accordance with FAR 15.208(a), offerors are responsible for submitting proposals that reach the Government office designated in this Broad Agency Announcement (BAA) Topic by the time specified. Offerors are strongly advised to submit their proposals so as to allow adequate time for submission. Any proposal received at the designated Government office after the exact time specified is "late" and will not be considered unless one of the exceptions at FAR 15.208(b) is met.

Estimated Award Date: ~~29 June 2012~~ ~~24 August 2012~~ ~~28 September 2012~~ ~~31 Oct 2012~~
~~21 November 2012~~ **06 December 2012**

5. SPECIAL PROPOSAL INSTRUCTIONS:

Effective 13 Feb 2009, all proposals must be submitted using the ASFI Bid Response System (BRS), accessible at <https://acquisition.army.mil/asfi/default.cfm>. Topic # 27 for proposal submission can be found by searching Contracting Opportunities for "TARBAATOPIC27." As reflected by the results of this search, proposals for Topic # 27 may be uploaded via the ASFI BRS at the following URL:

https://acquisition.army.mil/asfi/solicitation_view.cfm?psolicitationnbr=TARBAATOPIC27

PROPOSALS THAT REFLECT A "PARTIAL TECHNICAL SOLUTION" TO THE TECHNICAL OBJECTIVE AND DESCRIPTION ARE NOT ACCEPTABLE. THE GOVERNMENT WILL CONSIDER ONLY THOSE PROPOSED PROJECTS THAT ADDRESS ALL ELEMENTS OF THE OBJECTIVE/DESCRIPTION.

ALTERNATE PROPOSALS WILL NOT BE ACCEPTED FOR TOPIC #27.

W56HZV-05-R-BAA1 Topic #27

Added by Amendment 0067, issued 08 February 2012

Revised by Amendment 0069, 08 March 2012

Revised by Amendment 0070, 09 March 2012

Revised by Amendment 0071, 28 June 2012

Revised by Amendment 0072, 21 August 2012

Revised by Amendment 0073, 21 September 2012

Revised by Amendment 0074, 31 October 2012

Revised by Amendment 0075, 21 November 2012

6. POINTS OF CONTACT (POC):

TECHNICAL POCs:

Gus Panagos
6501 E. 11 Mile Road
AMSRD-TAR-R, M/S 212
Warren, MI 48397-5000
Phone: 586.306.8578
Fax: 586.282.5054
Email: constantine.panagos.civ@mail.mil

John Tasdemir
6501 E. 11 Mile Road
AMSRD-TAR-R, M/S 212
Warren, MI 48397-5000
Phone: 586.282.4124
Fax: 586.282.5054
Email: john.tasdemir@us.army.mil

Peter Schihl, Ph.D.
6501 E. 11 Mile Road
AMSRD-TAR-R, M/S 121
Warren, MI 48397-5000
Phone: 586.282.6147
Fax: 586.282.5054
Email: peter.j.schihl.civ@mail.mil

CONTRACTING OFFICER:

John M. Hopfner
Phone: 586.282.7359
Email: john.m.hopfner.civ@mail.mil

CONTRACT SPECIALIST

Jaclyn Flewelling
Phone: 586.282.9610
Email: jaclyn.m.flewelling.civ@mail.mil