



**DEPARTMENT OF THE AIR FORCE**  
**HEADQUARTERS SPACE AND MISSILE SYSTEMS CENTER (AFSPC)**  
**LOS ANGELES AIR FORCE BASE, CALIFORNIA**

31 May 2011

TO: All Potential Respondents

SUBJECT: Request for Information (RFI) Regarding a Conventional Prompt Global Strike (CPGS) Capability

REFERENCES:

Initial Capabilities Document (ICD) for Prompt Global Strike (PGS) dated 28 July 2006 (the reference document is classified and will be made available under separate cover)  
United States Strategic Command, Missile and Space Intelligence Center (MSIC) Threat Paper

ATTACHMENTS:

CPGS Capabilities Requirements Document (CRD)<sup>1</sup> dated 05 May 2011 (the attachment is classified and will be made available under separate cover)

**Introduction**

Air Force Global Strike Command (AFGSC) and the Space and Missile Systems Center (SMC) are engaged in early system engineering and development planning activities to define possible solutions for the U.S. Strategic Command CPGS need. These activities include developing an understanding of the capability needs, evaluating alternative concepts, identifying technology investment areas, assessing technology maturity and risks, and defining concept trade space. The intent of the development planning products is to provide Air Force inputs to decision makers on the “realm of the possible” in preparation for an FY12 Material Development Decision (MDD) by the Under Secretary of Defense for Acquisition, Technology, and Logistics.

Air Force Global Strike Command (AFGSC) and the Space and Missile Systems Center (SMC) are initiating this activity to define concepts to meet the U.S. Strategic Command need for a CPGS capability while focusing Air Force and industry science and technology efforts in support of the most promising technologies.

The Air Force desires to understand the concepts, architectures and designs that will provide the capability to strike globally, precisely, and rapidly with conventional kinetic and non-kinetic effects against high-payoff, time-sensitive targets in a single or multi-theater environment. The intended use of this future system is when US and Allied forces have no permanent military presence or only limited infrastructure in a region, regardless of anti-access threats.

The Air Force requests a white paper and a briefing from Industry in response to this RFI and invites all developers qualified to deliver the capabilities specified herein to respond. Those

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<sup>1</sup> The CRD is an internal document to SMC/XR with the intent to provide guidance for trade space analysis. The CRD is not an official DOD 5000 series document.

organizations interested in either a “piece” of the architecture or niche technologies are asked to collaborate with prime system developers and include their offering as part of the prime’s response to this RFI. The applicable North American Industry Classification System (NAICS) code is 541712 (Research and development in the physical, engineering, and life sciences (except biotechnology)) with a small business size standard of 1,000 employees.

Response to this RFI will be considered market research only for the purpose of gathering promising concepts that are technically feasible across the entire solution space. The concepts given consideration must have the potential to successfully address the capability gaps and desired operational attributes outlines in the CRD. The CRD was jointly developed by AFGSC and SMC as an internal document solely for this development planning activity.

The Air Force will be conducting an Industry Day on 1 June 2011 at the Space and Missile Systems Center. Potential respondents (to include small and small disadvantaged businesses) are encouraged to attend and engage in dialogue on the RFI. Time will be made available in the afternoon for contractors to have one-on-one sessions if desired. Details of the Industry Day will be addressed in a forthcoming announcement on the Federal Business Opportunities website ([www.fbo.gov](http://www.fbo.gov)).

### **Concept Attributes**

The Air Force will provide a CRD as one of the reference documents. The CRD identifies the driving requirements from the ICD and includes the identification of requirements to be analyzed in cost-benefit trades, Initial Operational Capability (IOC)<sup>2</sup> and Full Operational Capability (FOC) requirements.

### **Terms of Reference**

1. The PGS ICD outlines the top-level requirements, while the CRD specifies the driving performance requirements as derived from our analysis. The CRD and these terms of reference are the basis for the definition of system concepts.
2. The Air Force is particularly interested in cost reduction ideas to reduce the overall cost to an affordable level.
3. IOC is defined as an affordable Initial Operational Capability that meets the IOC requirements defined in the CRD (Table 3).
4. Representative target locations will be provided in the CRD (Table 3) for use in end-to-end analysis.
5. The New START Treaty places limitations on and allows inspections of strategic systems (other than nuclear) if they use legacy ICBM launchers or ICBM basing locations. The Air Force desires to avoid any New START treaty limitations for an operational system to the greatest extent possible. Limited use of legacy boosters is allowed for IOC. The Air Force is open to concepts involving new boosters, both solid and liquid, and a re-useable booster system.
6. The Air Force is open to the use of dispense or non-dispense concepts for the delivery of payloads to the target.

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<sup>2</sup> The IOC and FOC are intended to bound the envelope of CPGS capabilities and may not represent the IOC and FOC of an actual objective system.

7. The Air Force is open to the use of forward basing (US territories only) as long as the system complies with all existing treaty restrictions.
8. The proposed Mission Planning System for any concept must be compatible and/or interoperable with the STATCOM Mission Planning Systems in place.
9. Weapon carriage requirement and terminal criteria will be provided to complete end-to-end concept parameter development.
10. The Air Force is interested in the cost, schedule, technical trades between systems meeting the 50-50 rule and trajectories other than ballistic. The 50-50 rule means that more than 50% of the projected flight trajectory must be a non-ballistic trajectory. Flight trajectory options (e.g., boost-glide, sub-orbital) are not limited.

### **RFI Response Requirements**

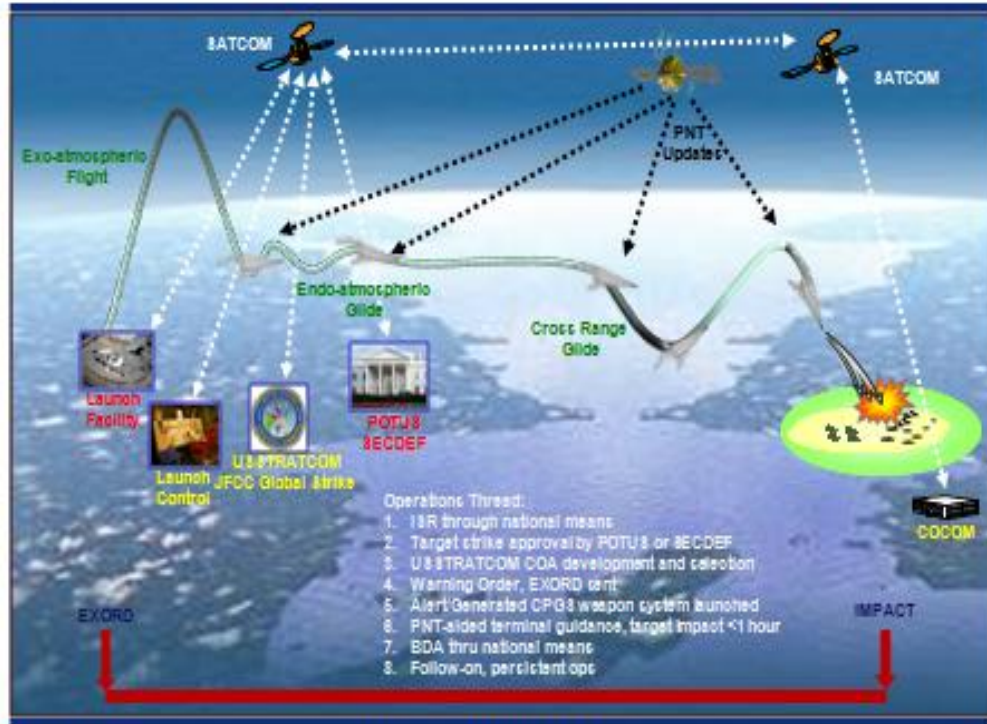
The Air Force is requesting materiel concepts that satisfy the IOC requirements and how those concepts will evolve to satisfy the FOC requirements. Offerors should include the following for both IOC and FOC in their responses to this RFI:

- A. Technical System Description:** Provide an end-to-end system solution (i.e., course of action to weapon on target) in sufficient detail to allow understanding of the concept. The description should contain trade space definition and characterization. Elements of the system should include, but not be limited to, the following:
  - Basing, including operations and support
  - Delivery vehicle
  - Booster
  - Weapon integration
  - Command and control
  - Mission planning
  - Required Air Force Furnished Equipment/Facilities
  - Architecture description including interfaces, operability and integration.
- B. Survivability:** Discuss approaches to survivability of the proposed concept (see MSIC Threat Paper)
- C. Concept of Operations:** Using the Operational View (OV-1) provided (Figure 1), describe the concept of operations and/or describe any necessary changes to the OV-1. Provide insight into an appropriate split between military, Air Force, and contractor manning and what the roles would be for each.



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## CPGS Operational View



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Figure 1: OV-1

- D. Performance Assessment:** Assess proposed design against the CRD requirements and identify potential discriminators. For requirements that drive the cost and risk of the concept, the Air Force would like to understand the cost and risk versus level of performance against the requirements. The Air Force would like responders to recommend the “knee-in-the-curve” concept that provides best-value balance of cost, risk and performance.
- E. Technology Assessment:** Include recommended technology investment areas and assess the system technology using standard NASA Technology Readiness Levels (TRL) to the unit level whenever possible. Assess the proposed software items using standard DoD software TRLs. Provide the technology maturation approach (i.e. technology roadmaps) of critical technology elements. As part of the technology development strategy, describe any recommended prototyping or demonstration approach.
- F. Integration and Test:** Explain the verification philosophy and the approach to functional and performance testing.
- G. Schedule:** Define schedule from Authority to Proceed to Initial Operational Capability to Final Operational Capability. Identify the critical path(s) and discuss schedule drivers (e.g., long lead items).

**H. Costs:** Provide details on the proposed design and historical analogous program experience. Details should include the following:

- Proposed WBS and associated costs at the second level
- Non-recurring and recurring costs
- Cost as a function of schedule
- Basis of estimate (e.g., actual, analogous, etc.)
- Heritage programs from which the costs are derived
- Cost and risk drivers

**I. Risk Assessment:** Discuss the risks and mitigation plans associated with the proposed system. The assessment should include operational, program, technical, and integration risks.

**J. Corporate Capabilities and Experience:**

- Demonstrate corporate capability and experience in the management, development, and integration of similar weapon systems. Your response should draw upon your company's relevant experience on appropriate and applicable contracts.
- Describe corporate facilities and labor resources required to deliver the system proposed.
- Explain how this program would be staffed in addition to maintaining staffing on existing programs.
- Identify major subcontractors that will be required to participate in order to deliver the system proposed.

#### **Instructions for Obtaining Attachments**

The reference and attachment ICD and CRD are classified Secret. Respondents are asked to contact the individual named below to make arrangements to pick up the documents at SMC:

2Lt Arthur Grijalva, SMC/XRDA  
310-653-9159  
arthur.grijalva@losangeles.af.mil

Alternate:  
Keith Newton, SMC/XRF  
310-653-9070  
Keith.newton.ctr@losangeles.af.mil

These documents will only be made available for pick up between 0900 and 1500 on 07 Jun 2011.

#### **Delivery Instructions**

Respondents are asked to notify SMC/XR via unclassified email to the individuals named below of your intent to submit a response to this RFI:

2Lt Arthur Grijalva, SMC/XRDA

310-653-9159  
[arthur.grijalva@losangeles.af.mil](mailto:arthur.grijalva@losangeles.af.mil)

Alternate:  
Keith Newton, SMC/XRF  
310-653-9070  
[Keith.newton.ctr@losangeles.af.mil](mailto:Keith.newton.ctr@losangeles.af.mil)

The responses may be classified up to the Secret level and will adhere to Department of Defense security guidance documentation for classification, marking, handling, and distribution. In addition to the white paper, respondents are asked to provide an audio-visual presentation to the Air Force on their submission. The purpose of the presentation is to provide an opportunity for each of the industry partners to engage in a dialogue with the review team.

White paper submissions are to be delivered no later than 0800 Pacific Time on 28 July 2011. Please provide one (1) original plus five (5) copies and one (1) softcopy (CD). The total page count for the white paper submission is limited to no more than 50 (one-sided) pages. A page is defined as each face of an 8.5 x 11 inch sheet with information contained within standard 1" page margins (12 point font, no foldouts). Please provide the softcopy of the white paper in MS Office Word 2007 or later, as well as in Adobe Acrobat Exchange Portable Document Format (.pdf) with copy/paste enable.

Respondents are asked to deliver the submission in hardcopy and softcopy (CD) form using one of the methods described below. Given the requirements of the RFI response and the content of the CRD, the Air Force anticipates that the responses will be classified at the SECRET level.

- Registered Mail, outer envelope addressed to:  
SMC/XROS  
483 N. Aviation Blvd  
El Segundo, CA 90245  
Inner envelope: ATTN: 2Lt Arthur Grijalva, SMC/XRDA
- Hand Deliver to SMC/XR: Contact 2Lt Arthur Grijalva, SMC/XRDA at 301-653-9159 to arrange delivery. The alternate person to contact is Keith Newton, SMC/XRF at 310-653-9070.

Industry presentations will be conducted approximately 7 days after receiving respondent information. Briefings are limited to two hours in length with an additional 30 minutes at the end for Air Force questions and discussions. Respondents are asked to contact 2Lt Arthur Grijalva to schedule the briefing.

All responses are to include the following:

- Company Name
- Company Address
- Contractual point of contact, including phone number and email address
- Technical point of contact, including phone number and email address

- Secure voice and SIPRNet contact information, if available

The Air Force intends to use Federally Funded Research and Development Center (FFRDC) and Systems Engineering and Technical Assistance (SETA) support to assist in the review of the RFI responses. All Air Force, FFRDC, and SETA personnel have signed appropriate Non-Disclosure Agreement forms with the Air Force. The Air Force will treat all responses in a “Company Proprietary” manner. To inquire about NDAs on file or the need to get company specific NDAs please contact Keith Newton, XRF at 310-653-9070, [keith.newton.ctr@losangeles.af.mil](mailto:keith.newton.ctr@losangeles.af.mil).

This notice is a Request For Information (RFI) only and the US Air Force does not assert or imply that any Request for Proposal (RFP) or other acquisition action will occur as a result of this RFI. Be advised that the Air Force will not pay for any costs associated with the preparation of the requested white papers. The Air Force may contact a respondent for more information or clarification purposes. The Air Force does not commit to contacting a respondent or providing any feedback on a response. The Air Force does not intend to issue any findings or reports outside the Air Force resulting from the RFI. Due to the expedited timeline, questions may be submitted with the RFI response and may be considered in any potential future solicitations. Respondents to this RFI should stipulate any assumptions used in the development of their response. The Air Force anticipates that respondents will respond to the information request to the best of their ability with as much of the request information as time permits by the specified deadline. No extensions to the schedule are foreseen.

### Points of Contact

Primary Technical:  
2Lt Arthur Grijalva, SMC/XRDA  
310-653-9159  
[arthur.grijalva@losangeles.af.mil](mailto:arthur.grijalva@losangeles.af.mil)

Alternate Technical:  
Capt Trevor Warren, SMC/XRDA  
310-653-9142  
[trevor.warren@losangeles.af.mil](mailto:trevor.warren@losangeles.af.mil)

Joseph Simonds, IA-4, SMC/XRC  
310-653-9070  
[joseph.simonds@losangeles.af.mil](mailto:joseph.simonds@losangeles.af.mil)

Alternate Contracts:  
310-653-9070  
[keith.newton.ctr@losangeles.af.mil](mailto:keith.newton.ctr@losangeles.af.mil)

Sincerely,

//signed//

Joseph Simonds  
Contracting Officer  
SMC/XR