

REQUEST FOR INFORMATION

In Support of Ideas for

Materiel and Non-Materiel Approaches for the

Air Force Homeland Air and Cruise Missile Defense of North America

(HACMD of NA) Mission Area

9 August 2006

THIS IS NOT A SOLICITATION. IT IS A REQUEST FOR INFORMATION. In accordance with Federal Acquisition Regulations paragraph 15.201 (e.), responses to this notice are not offers and cannot be accepted by the Government to form a binding contract.

1. Purpose. This is a Request for Information (RFI) in support of Ideas for Materiel/Non-Materiel Approaches (IMA) for an Air Force Functional Solution Analysis (FSA). Headquarters Air Force, Directorate of Operational Capability Requirements is leading a JCIDS analysis to determine the best approaches for mitigating high-risk joint gaps in the HACMD of NA mission area. We are soliciting ideas for materiel approaches from industry to address the high priority capability gaps identified in a Functional Needs Analysis (FNA) accomplished by the joint services and combatant commands. As a part of this study, we also solicit inputs for Non-Materiel approaches that may be known by you to solve or mitigate these capability gaps. This Integrated Air and Missile Defense (IAMD) FNA identified capability gaps in both proficiency and sufficiency out to the year 2015. This HACMD of NA FSA will address nine of these overarching capability gaps, which are described in more detail in the following paragraph.

To help focus your responses please consider the following three Defense Intelligence Agency (DIA) approved scenarios as you answer the survey.

Scenario 1 - A 9-11 type terrorist hijacking of an airliner within the continental United States.

Scenario 2 - A general aviation aircraft loaded with weapons of mass destruction which launches from a Canadian airport and is headed for the continental United States.

Scenario 3 - A rogue maritime platform fires a cruise missile off the coast of Maryland targeting a major metropolitan area.

2. Capability gaps. There are nine overarching capability gaps. Your Material/non-material ideas may address all, some or combinations of the components of these nine overarching capability gaps:

Capability Gap 1. North American Aerospace Defense Command (NORAD) mission analysts do not receive accurate information from event information contributors in a multi-security level, net-centric manner compatible with automatic fusion into the NORAD common operating picture. A common operating picture is generally defined as providing the appropriate types and level of information to the various agencies in a near-real time, customizable, network-centric virtual information grid. The common operating picture should provide air defense analysts with a single source of information that provides details on a suspect air and cruise missile target that is automatically tailored to individual security and functional requirements. **What materiel/non-materiel approaches are you aware of that could provide an air defense analyst with 1) automatically fused information 2) specific sources or data formats in a multi-level security network centric environment, and how they are handled?**

Capability Gap 2. Inadequate surveillance coverage of the Area of Operations (AO) combined with weather limitations and on-station endurance for airborne sensors by the current or planned Wide Area Air Surveillance Family of Systems (FoS). The NORAD AO is broadly defined as the continental United States, Alaska, Canada and the approaches, from surface to 100,000 feet above ground level and extending 600 nautical miles from any coast or border. **What materiel/non-materiel approaches are you aware of for wide area air surveillance and what is their mobility/flexibility with respect to deployment?** Please list any capability even if the capability is not yet fully operational, identifying known coverage modes, associated strengths and challenges. Are we maximizing the capability of those systems?

Capability Gap 3. Insufficient sensor capabilities to meet low Radar Cross Section, minimal amounts of Radio Frequency (RF) energy impinged Radar Absorbent Materiel (RAM), or low altitude, low speed, emerging technology. Cannot adequately protect joint maneuver / maneuvering forces from reconnaissance, surveillance and target acquisition (RSTA) and the full array of potential aerial threats, including rockets, artillery and mortar (RAM) projectiles. **What materiel/non-materiel approaches are you aware of that could partially or fully mitigate any or all of these limitations?** For approaches identified in Gap 2, provide details on the predicted and measured performance of the sensors against small high speed and small, low and slow targets as well as the percent of that resource needed to maintain track.

Capability Gap 4. The current or planned Wide Area Air Surveillance FoS sensor contributors do not support automatic fusion into the NORAD common operating picture in a manner compatible with NORAD analysts' requirements. Air defense analysts do not receive automatically fused wide area surveillance sensor (airborne, sea or ground based radar) data from the current or planned FoS in a format that meets their requirements. For example, when air defense analysts encounter a suspect air or cruise missile target, they desire a single presentation of sensor information within the NORAD

common operating picture. **What sensor fusing capabilities (including but not limited to magnitude of data, types of sensors and data, number of sensors, latency and bandwidth of data, and visualization/output capability) are you aware of that could provide air defense analysts with automatically fused data (identify analyst interface and actions) from current and planned sources in a multi-security level network centric environment?**

Capability Gap 5. Track Identification is defined as the ability to distinguish type, tail number, flight plan, nation of origin, etc. The current FoS provides inadequate track Identification (ID) information (e.g. electronic ID, visual ID, etc.) to the NORAD common operating picture enabling analysts to identify a track with 100% reliability. Air and cruise missile vehicle Identification is defined as the ability to distinguish type, tail number, flight plan, nation of origin, payload type (i.e., CBRNE), etc. The current or planned system does not provide adequate air and cruise missile vehicle ID information to the air defense common operating picture. Analysts are unable to currently identify an air and cruise missile vehicle with 100% reliability. **What capabilities or materiel/non-materiel approaches are you aware of that can provide identification data (identify levels of identification and reliability for each level) for air and cruise missile vehicles (any airborne vehicle)?** Include cueing/input assumptions and provide timeline.

Capability Gap 6. Track Classification is defined as the ability to determine track intent. Track classification is derived from track ID information and other contributing event information. The current or planned FoS provides inadequate information to the NORAD common operating picture to classify a track with 100% reliability. Air and cruise missile vehicle classification is defined as the ability to determine air and cruise missile vehicle intent. The current or planned system does not provide adequate classification information to the air defense common operating picture. Analysts are unable to classify an air and cruise missile vehicle with 100% reliability. **What classification capabilities are you aware of to determine the intent of airborne vehicles and/or to predict the actions of an air and cruise missile vehicle and crew? (psychological, cultural, or criminal profile etc.)**

Capability Gap 7. An Assessment is defined as the engagement decision recommendation (e.g. lethal engagement, non-lethal engagement, continue monitoring, etc.) provided to the proper decision authority in accordance with NORAD doctrine. This assessment is derived from the compilation of all track ID / classification data and other contributing event information. The current or planned FoS provides inadequate information to the decision maker to determine an assessment with 100% reliability. **What assessment capabilities are you aware of that could be provided to a decision maker operating in a time critical environment and how is this transferred/portrayed to a decision maker?**

Capability Gap 8. To negate current and future irregular threats within the NORAD Area of Operations, analysts / decision makers are increasingly dependent on near real time, 100% accurate information from interagency entities. Inaccurate track

assessments, or plans developed as a result of inaccurate information, (which subsequently leads to engagements) and has catastrophic implications within the NORAD area of operations. The Homeland Air Cruise Missile Defense system is unable to support decision makers with the requisite accuracy of information to assess NORAD Homeland Air Cruise Missile Defense events with 100% reliability. **What information/mission services or planning capability can your organizations provide that shortens the time required to prepare accurate information for decision making? How can assessments be made uniformly characterized across disparate sensors, and how does the capability handle future data inputs?**

Capability Gap 9. Insufficient weapons delivery platform availability (i.e., number of engagement platforms) to sufficiently cover the NORAD AO; many of the engagement platforms lack the ability to negate advanced cruise missiles and other irregular platforms: Homeland Air Cruise Missile Defense family of systems does not provide a completely deployable / JIM interoperable air and cruise missile defense system of systems. **What approaches/tools are you aware of that could assist decision makers in selecting/tasking the most efficient combination of capability to defeat an air and cruise missile threat and what is the level of analyst involvement?**

3. Addressing Capability Gaps. Materiel/Non-materiel approaches can be recommended to fix (fully / partially solve) capability gaps at three levels, the system level (integrated solution for a major capability gap), the component level (a fix for a specific shortfall described in the capability gap), or the functional level (a contributing capability but insufficient in and of itself to either fix a major capability gap or fix a specific shortfall within a capability gap). The following paragraphs describe the three levels: a. System Level. At the system level, materiel approaches may address a complete gap expression, e.g., Cannot completely defend designated critical assets against the array of potential air and cruise missile threats. When proposed at the system level, the materiel solution must holistically address all the specifics of the shortfall, e.g., an integrated system of sensor(s), command and control, and weapon(s) that will be capable of integrating horizontally and vertically into the NORAD operational architecture and include a deployment timeline supported by production rates and equipment maintainability. When proposed at the capabilities gap level, the information sought as described in paragraph 6 below, should address each major element (sensor, command and control, and weapon) and then be rolled into a system summary. b. Component Level. At the component level, materiel approaches may be proposed that address components of the capabilities gap, but not the entire gap. These approaches may be proposed at an individual component level (e.g., sensor, command and control, or weapon) or multi-component level. Materiel approaches in this class of response must be capable of fixing a specific portion of the gap (e.g., insufficient identification or classification capabilities) or multiple specifics of the gap. When possible, the material interface to the system level should be identified. c. Functional Level. Materiel approaches may be proposed that address functions that partially fix a specific portion of the gap (e.g., a wide-band, highly reliable, secure, jam-resistant, high capacity digital radio) to partially fix the specific of the gap. Materiel/non-materiel solutions identified should include information on when the design was completed, what the production schedule is, and where the equipment is currently

operational. If any external cueing is assumed this must be identified. Performance information needs to include performance for 24/7/365 all weather. Performance provided must specify whether it is predictions, specification, or measurement.

4. Information Sought: HAF/A5R seeks information on potential materiel/non-materiel approaches. Information should be provided at the component level and then aggregated at the system or multi-component level using the prescribed template with an optional white paper (Note: limit 12 pages in 12-pitch Times New Roman font in 8 ½ x 11, one-inch margins).

a. Name and Description of the Capability. The templates and optional white-paper narrative should provide a short description of the materiel approach proposed, identification of the capability gap or portion of the gap that the proposed materiel solution will fix, how the proposed materiel solution fixes the gap or portion thereof, an OV-1 architecture view showing the baseline and proposed changes, and a subjective assessment as to how well or how much of the gap or portion thereof would be fixed. **b. Technology Maturity and Technology Readiness Assessments.** An assessment of the maturity of the technology involved will enable an evaluation of the risk and programmatic efforts necessary to mature the technology and achieve an initial operational capability (IOC) within the 2015-2025 timeframe. Respondents should address current Technology Readiness Level (TRL) assessments and explain in detail TRLs assessed as less than or equal to TRL 6. Additional explanations on the TRL will be sent upon request. **c. Anticipated Program Overview.** An estimate of the schedule and funding profile to complete development and testing of the materiel approach will enable an evaluation of the affordability of the proposed solution and must factor in existing commitments. For this estimate, respondents can assume that new money to develop the capability will be made available beginning in FY10. An estimate of the procurement cost per unit will enable an assessment of the affordability to achieve IOC within the 2015-2020 timeframe and to maintain the equipment as well as an assessment of the affordability of the procurement tail. **d. Benefits.** A broad assessment of impacts of the proposed materiel approaches / solution across the domains of doctrine, organization, training, leadership and education, personnel and facilities (DOTLPF) indicates whether or not the proposed materiel solution can produce a meaningful military capability. Request respondents to this call for concepts also include an initial abbreviated DOTLPF assessment.

5. Analysis of Material Approaches (AMA). In the AMA (third sub-step of the FSA), proposed materiel approaches will be evaluated by a team of operational and technical analysts. The information provided will be assessed with respect to the Air Force Homeland Air and Cruise Missile Defense of North America Mission needs, factoring in the operational utility, cost effectiveness, maintainability, ability to procure, etc. This request does not imply a commitment from the government to pursue acquisition.

6. Responses. Information should be provided electronically in the form of completed response templates and white papers (as appropriate) as email attachments. Use of "Return receipt requested" will provide the only indication of receipt. All templates and

white papers will be reviewed by the study team consisting of government personnel and their support contractors: L-3 Com, CAS-DC, CSC, Anteon, Chenega, Northrop Grumman, SI-International, CYBER, SRA, General Dynamics Information Technologies. All information provided will be adequately protected. Any proprietary information must be identified. To be reviewed, the statement "Releasable to Government Agencies and their supporting Contractors for Review Only" must accompany any proprietary submission. The government reserves the right to request further clarification or request presentations to enhance our understanding of the respondent's submittal. All templates and white papers that fail to comply with the instructions, or present ideas not pertinent to the gaps identified, may not be reviewed. Responses to this request for information are requested by 29 September 2006. Please send responses or address questions to Major John Caudill, 703-588-6437 John.Caudill@pentagon.af.mil, John.Caudill@af.pentagon.smil.mil for classified. The HAF/A5R POC for this action is Major Michael Reschke, (703) 601-0155, DSN 329-0155, email Michael.Reschke@pentagon.af.mil, Michael.Reschke@af.pentagon.smil.mil. Interested respondents who have Advisory and Assistance Services contracts are put on notice that the potential for an Organizational Conflict of Interest (OCI) may exist. Due to the identified contractor support personnel who will be evaluating the information received, any respondent who submits information in response to the above RFI, must also provide the Contracting Officer with complete information regarding previous or ongoing work as support contractors for HAF/A5R or the 753D ELSG. The 753D ELSG Contracting Officer for this RFI is Captain Robert Sadler, (781)377-7391, email Robert.Sadler@hanscom.af.mil.

NOTE: The information received will not obligate the Government in any manner nor will the Government reimburse contractors for any costs associated with submittal of the requested information. This request does not constitute an Invitation for Bid or a Request for Proposal, nor should it be considered as a commitment on the part of the Government.