



## Request for Information (RFI): B-2 Stealth Bomber Next Generation Zonal Radar

**Solicitation Number:** RFI-B-2\_Zonal\_Radar

Agency: Department of the Air Force

Office: Air Force Materiel Command

Location: AFLCMC/PK - WPAFB (includes PZ, WL, WW, WI, WN, WK, LP, WF, WK)

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**Notice Type:**

Sources Sought

**Original Posted Date:**

October 17, 2016

**Posted Date:**

October 21, 2016

**Response Date:**

Jan 16, 2017 12:59 pm Eastern

**Original Response Date:**

Jan 16, 2017 12:59 pm Eastern

**Archiving Policy:**

Automatic, on specified date

**Original Archive Date:**

January 17, 2017

**Archive Date:**

January 17, 2017

**Original Set Aside:**

N/A

**Set Aside:**

N/A

**Classification Code:**

16 -- Aircraft components & accessories

**NAICS Code:**

334 -- Computer and Electronic Product Manufacturing/334511 -- Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing

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**Synopsis:**

Added: Oct 17, 2016 3:54 pm Modified: Oct 21, 2016 8:06 am [Track Changes](#)

1.0 Description

1.1 THIS IS A REQUEST FOR INFORMATION (RFI) ONLY. This RFI is issued solely for information and planning purposes - it does not constitute a Request for Proposal (RFP) or a promise to issue an RFP in the future. This RFI does not commit the Government to contract for any supply or service whatsoever. The U.S. Government will not pay for any information or administrative costs incurred in response to this RFI; all costs associated with responding to this RFI will be solely at the interested party's expense. Not responding to this RFI does not preclude participation in any future RFP, if issued.

1.2 The B-2 program currently uses the SCI-2k near-field portable radar cross section (RCS) imaging system, designed and built by Sensor Concepts Incorporated (SCI). SCI recently announced it was discontinuing production and support of the radar unit by February 2022. The SCI-2k is a part of B-2 low observable (LO) diagnostic and maintenance operations. Due to this aforementioned announcement, the Air Force is open to and aggressively pursuing new ideas and solutions to replace and improve upon its current RCS diagnostic capability for wing-level maintenance operations. In addition, the B-2 Program Office is prepared to investigate and

potentially fund program-specific system modifications to solutions that show high-pay-off potential, which may lead to the future procurement of systems to meet mission needs before 2022. Currently, the B-2 program operates nine (9) SCI-2k systems.

## 2.0 Background

B-2 LO maintenance relies on daily and weekly visual inspections to identify signature defects that are augmented by periodic radar-based inspections performed with the SCI-2k system since Jan 2004. The SCI-2k system is a near-field Tier II (zonal imaging) linear synthetic aperture radar (SAR) that is designed to operate over a 100 MHz-18 GHz frequency bandwidth, but used primarily in the 2-18GHz band by B-2 maintenance.

The SCI-2k system is a deployable system that maintainers can configure according to diagnostic needs. It includes 13 sub-assemblies, 12 of which can be packed in a separate storage case. The case sizes vary from 14 -44 cubic feet. An antenna lift assembly fits into a crate that measures 114 cubic feet.

2.1 Planned Requirements: New diagnostic radar replacement units would need to be in place and fully operational by January 2022.

2.2 Planned Delivery Requirement: An initial replacement solution for use in demonstration and validation would need to be in place not later than October 2021.

2.3 Security: The current system collects and exports data up to the Top Secret/Special Access Required (TS/SAR) level. Additional security requirements are described in Section 3.4, below.

## 3.0 Requested Information

Responses should address the following requirements. If proposed solutions do not address these requirements the response should discuss the path forward to achieve the end requirements.

### 3.1 Functional Requirements

3.1.1 The solution shall be a portable diagnostic radar system that generates accurate and consistent RCS measurements across the specified RF range commensurate with wing-level maintenance operations.

3.1.2 The system shall be capable of collecting wideband frequency data as a function of radar position to allow for SAR image processing.

3.1.3 As a threshold, the system shall incorporate a positioning system (or operational approach) that allows repeatable positioning of the radar relative to the aircraft as well as controlling (or measuring) the motion/position of the radar system to support SAR data collection. As an objective, the system will self-register continuous relative position to the aircraft.

3.1.4 The system is expected to operate indoors so techniques to suppress clutter are required.

3.1.5 It is preferable that the system not require dedicated radio frequency (RF) absorber for valid measurements.

3.1.6 The system shall have built in procedures to test system health and perform troubleshooting.

3.1.7 The system shall produce and display several real time data products via a user interface for quality control. The data products shall include, but are not limited to, SAR images, and RCS Color Map vs Frequency vs Position (RCS Global Plot).

3.1.8 The system shall be able to be calibrated and maintained in the field by the end user, preferably by non-engineering personnel. The government requires sufficient technical data to perform routine maintenance. The government also requires sufficient insight into the source software and output data formats to facilitate interface with existing and future RCS assessment systems.

### 3.2 Performance Requirements

#### 3.2.1 Frequency

3.2.1.1 The system shall operate continuously over 2 GHz - 18 GHz as a threshold.

3.2.1.2 The system should be capable of operation outside the threshold frequency range.

#### 3.2.2 Polarization

3.2.2.1 The system shall be able to collect data in both the HH and VV polarization as a threshold.

3.2.2.2 The system should collect data in the HH, VV, HV, and VH as an objective.

### 3.3 Availability Requirements

3.3.1 The system will normally be operated in an aircraft hangar (approximately 200 feet wide by 100 feet long by 30 feet high)

#### 3.3.2 Setup

3.3.2.1 The system, including any positioning subsystem components, warm-up, and system calibration can be accomplished in less than 4 hours by three qualified technicians, as a threshold.

3.3.2.2 A setup time of less than 30 minutes achieved by no more than two qualified technicians is the objective.

### 3.4 Security Requirements

3.4.1 The system shall be designed with proper security controls such as removable hard drives with provisions that encrypt all data. The intent is to be able to store the system in controlled, but unclassified areas.

#### 4.0 Responses

4.1 Interested parties are requested to respond to this RFI with a white paper.

4.2 The RFI white papers should be in Microsoft Word for Office 2007 compatible format are requested no later than 16 January 2017, 23:59 EST. Responses should be submitted via e-mail only to [kelley.poree.1@us.af.mil](mailto:kelley.poree.1@us.af.mil).

Proprietary information, if any, should be minimized and **MUST BE CLEARLY MARKED**. To aid the Government, please segregate proprietary information. Please be advised that all submissions become Government property and will not be returned. **[AMENDMENT 1 REMOVED: If any responding company does not currently have a Proprietary Data Protection Agreement (PDPA) that would permit Government personnel to review and evaluate the submitted whitepaper in response to this RFI, the responding company should request to sign PDPAs with the Government.]**

**AMENDMENT 1 ADDED: Information received in response to this RFI shall be safeguarded adequately from unauthorized disclosure in accordance with FAR 15.207.**

4.3. Section 1 of the white paper shall provide administrative information, and shall include the following as a minimum:

4.3.1. Company name, mailing address, overnight delivery address (if different from mailing address), phone number, fax number, and e-mail of designated point of contact.

4.3.2. Business type (large business, small business, small disadvantaged business, 8(a)-certified small disadvantaged business, HUBZone small business, woman-owned small business, very small business, veteran-owned small business, service-disabled veteran-owned small business) based upon North American Industry Classification System (NAICS) code 334511, Radar Systems and Equipment Manufacturing. Responding companies are cautioned, however, that this is a general description only. Additional standards and conditions apply. Please refer to Federal Acquisition Regulation FAR 19 for additional detailed information on Small Business Size Standards. The FAR is available at <http://www.arnet.gov>.

4.3.3 The facility security clearance of the offeror.

4.3.4 Whether your company is domestically or foreign owned (if foreign, please indicate the country of ownership).

4.4 Section 2 should describe your company's technical capabilities.

4.4.1 Address your company's ability to deliver a system that meets the requirements described above in Section 3 of this RFI.

4.4.2 Include company experience with the following:

4.4.2.1 Design, development, integration, test and delivery/deployment of aircraft low observable (LO) inspection and measurement systems operating on Top Secret, Special Access Required network(s). (Yes / No).

4.4.2.2 Integration of LO diagnostic radar data with aircraft signature assessment data systems? (Yes / No).

4.4.3 Does your company have any working involvement with the B-2 signature diagnostic environment (inspection systems, measurement systems, data archiving, or data processing)? (Yes / No). Provide evidence of your company's experience in the above areas.

4.4.4 Supportability. Describe the maintenance strategy, considering topics such as radar calibration, component and system maintenance, and software updates or releases.

4.4.5 Open System Architecture. Describe areas of the system design (hardware and software) where open system or modular design could be implemented. Describe whether any software components use proprietary elements which would not be transferable to Government support following development.

4.4.6 Data Rights. Describe all system software items and technical data that would not be provided with at least Government Purpose Rights (see DFARS 227.71 & 227.72).

4.5 Section 3 should address your company's business practices.

4.5.1 Does your company have experience with long-term contracts, i.e. more than 5 years in duration? (Yes / No).

4.5.2 Does your company have experience managing subcontractors developing portions of a system? (Yes / No). Does your company have experience integrating products provided by a subcontractor into the overall system? (Yes / No). If yes, does your company accept overall responsibility for both the subcontractor's product and that product integrated into the overall system?

4.5.3 For this effort would your company need to subcontract any part of the work? (Yes / No). If yes, identify and briefly describe any necessary subcontracts.

4.5.4 What is your recommended contracting strategy for this effort?

## 5.0 Technical Questions

If you have technical questions regarding the details of this RFI, please contact Dr. Phil Beccue at [philip.beccue@us.af.mil](mailto:philip.beccue@us.af.mil) or (937) 255-6092.

## 6.0 Summary

THIS IS A REQUEST FOR INFORMATION (RFI) ONLY to identify sources that may possess the expertise to provide a Next Generation Zonal Radar for the B-2 Program Office. The information provided in the RFI is subject

to change and is not binding on the Government. The Air Force has not made a commitment to procure any of the items discussed, and release of this RFI should not be construed as such a commitment or as authorization to incur cost for which reimbursement would be required or sought. All submissions become Government property and will not be returned.

**Contracting Office Address:**

2275 D Street  
Wright-Patterson AFB, Ohio 45433-7218  
United States

**Place of Performance:**

Undetermined.

United States

**Primary Point of Contact.:**

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**Opportunity History**

- Original Synopsis  
*Sources Sought*  
Oct 17, 2016  
3:54 pm
- Changed  
Oct 21, 2016  
8:10 am