

STILETTO MARITIME DEMONSTRATION PROGRAM

Sources Sought # CD18-2



CAPABILITY DEMONSTRATION 18-2

Maritime Craft Radar Systems

Hosted by the Stiletto Maritime Demonstration Program

Distribution Statement A: Approved for public release; distribution is unlimited

1. Purpose

1.1 The purpose of this Sources Sought is to solicit commercial or military marine radar systems from private industry, government Research and Development (R&D) organizations, and academia for inclusion in a capability demonstration event focused on radar employment on combatant craft. Radar systems can be Solid State Power Amplifier systems, including Frequency-Modulated Continuous-Wave systems, as well as Magnetron systems. The results of this effort will be used to inform decision makers of emerging and available technology solutions that will enhance or improve existing capabilities.

1.2 This Sources Sought is for Stiletto Capability Demonstration 18-2. Capability demonstrations are planned for July 2018 off the coast of Virginia Beach, VA.

1.3 The deadline for replies is 11 May 2018.

1.4 The Government intends to enter into one or more Cooperative Research and Development Agreements (CRADAs) on the basis of this Sources Sought.

2. Background

2.1 Department of Defense (DoD) and other Government organizations, including the U.S. Coast Guard (USCG), Naval Special Warfare, and Navy Expeditionary forces are interested in developments and state of the art for marine radar systems capable of being employed on combatant craft (usually defined as craft less than 150 ft. in length), operating in a near land or port area environment. Radar systems with size, weight, and power requirements (SWAP) compatible with small craft are desired. Selected systems will be evaluated based on their ability to detect and track small surface targets in a relevant maritime environment. Planned surface targets may include swimmers, periscopes, life rafts, or small fast moving boats. Early detection and target tracking are vital to mission success.

2.2 The Stiletto program, with input and assistance from multiple government stakeholders, will plan and conduct the Capability Demonstration in July 2018 off the coast of Virginia Beach, VA and in the Chesapeake Bay area. The selected radar systems will be mounted on the Stiletto craft to demonstrate detection and tracking of various surface targets in different sea states. The systems will also be evaluated on their navigation attributes.

3. Capability Demonstration (CD)

3.1 A CD provides an opportunity for technology developers to interact with operational commands and/or other Government personnel to determine how their systems may support or enhance operational requirements. Additionally, a CD allows technology developers to demonstrate selected technology in a realistic scenario in a relevant environment.

3.2 The Assistant Secretary of Defense for Research & Engineering, Rapid Reaction Technology Office (RRTO) sponsors the Stiletto Maritime Demonstration Program (SMDP), which hosts the CD. The Naval Surface Warfare Center, Carderock Division (NSWCCD) Combatant Craft Division manages the SMDP for RRTO.

3.3 Respondents will be selected to participate in the CD based on readiness and ability to meet the goals of the CD. The Government anticipates a partnering arrangement with selected

respondents in the form of one or more CRADAs, in which the respondents provide the equipment required to implement a solution for demonstration. The Government will use the CRADAs to further assess the radar systems. Each demonstration is intended to foster highly collaborative engagement with interested technology providers, with the dual objectives of giving the Navy and civilian agencies new insight into promising technologies. The demonstrations will enable industry collaborators the opportunity to better understand the maritime marketplace and evaluate their technology's respective applicability.

3.4 The CD is anticipated to last at least two weeks, with at least two days provided to each selected respondent, depending on the number of respondents, to demonstrate their equipment. When a system is selected for evaluation, the SMDP will work with the system provider to match the technology with an appropriate CD scenario, accounting for each party's cost, schedule, and technical constraints. SMDP will provide venues, supporting infrastructure, and personnel for assessment (operational and technical), based on available resources. Costs specific to running the technology developer's technology, as well as the technology developer's travel costs, will be at the technology developer's expense.

4. Maritime Patrol Craft Radar Systems CD Description

4.1 CD Objective

4.1.1 The objective of this CD is to evaluate the state of the art of marine radar systems that can be employed on combatant craft and their ability to detect and track surface targets in a near shore environment.

4.1.2 Tentative dates for this CD are from 16 - 27 July 2018 off the coast of Virginia Beach, VA and in the Chesapeake Bay area. The demonstration will focus on the radar systems' performance against specific surface targets, stationary and moving, ranging in size from swimmers and periscopes to patrol boats. The radar systems' navigation features, including chart integration, Automatic Identification System (AIS), and Automatic Radar Plotting Aid (ARPA) are also of interest.

4.2 Desired Capabilities

The following capabilities are desired:

- 1) Able to integrate on combatant craft (less than 150 ft. long).
- 2) Advanced detection and auto tracking of small surface targets.
- 3) Navigation features (Chart overlays, ARPA, AIS, etc.)
- 4) Advanced signal processing and antenna designs.
- 5) High-Resolution imagery.
- 6) Operator functionality to support small crews.

4.3 CD Characteristics

4.3.1 The CD will assess technology using direct measurement, when possible. This will include, but is not limited to, detection ranges, durations, false contacts/alarms, track quality, and navigation capabilities.

4.3.2 In addition to a quantitative assessment of detection and tracking capability, other important considerations, that will be qualitatively assessed, include:

- 1) Installation and integration requirements
- 2) Reliability, availability, and maintainability
- 3) Tactical implications

4.3.3 The SMDP will coordinate use of the demonstration platforms and required integration for each selected technology. The SMDP will assist in identifying and integrating additional components required for system testing. The SMDP will assist with access, coordination, engineering, installation, interface with regulatory bodies, operation, and evaluation services. The SDMP will arrange all target services. The Stiletto craft will be used during this demonstration as the demonstration platform.

4.3.4 After review of the demonstration applications, the Government may invite candidates to demonstrate their technologies aboard Stiletto. This venue will provide an opportunity for the candidate to interact with stakeholder personnel. Industry participation in demonstration activities does not suggest or imply that NSWCCD or any other Government activity will endorse, procure, or purchase equipment.

5. Submission Instructions

5.1 Information Requested

The SMDP requests that technology developers submit an application to participate. To be considered, the application shall include the following (where applicable):

- 1) Technology developer name/description. Include key demonstration team members and point of contact (POC) information.
- 2) A summary of previous experience in the development and use of radar technology.
- 3) Overview of the radar technology or technologies the company is interested in demonstrating. This overview shall include:
 - a. Technical specifications such as type of radar; transmit power, coverage, frequency, beam width, antenna gain, range resolution, pulse, auto-detection, and tracking capability information, as well as any additional sensor specifications.
 - b. A description of the proposed radar's level of product maturity, including whether it is in the commercial marketplace or still under development. If the proposed radar is currently under development, please describe its status.
 - c. A description of the installation, integration, and operating requirements, including estimated time to install/remove.
 - d. Address whether the proposed technology has already been deployed in the maritime environment. If it has, please describe. If not, please indicate what modifications are required for it to be deployable in a maritime environment.
 - e. Address the potential technical benefits of employing the technology on combatant craft.
- 4) System Requirements - briefly describe the details of the proposed system:
 - a. Major system component descriptions and dimensions.
 - b. Estimated total weight.
 - c. Radome or open array scanner/size of scanner.

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- d. Power requirement.
 - e. Network connections (if needed).
 - f. Data requirement: internet connectivity, GPS, etc.
 - g. Restrictions (e.g. cable length, antenna height, environment, etc.).
 - h. Anticipated number of personnel for demonstration.
 - i. Hazardous materials (if applicable).
 - j. If applicable, please provide all pertinent information about any transmitter or receiver that you intend to operate as part of this demonstration. Frequency, transmit power, antenna information, required separation from other emitters, etc. Please include a basic system diagram.
- 5) **DO NOT SUBMIT CLASSIFIED INFORMATION** in the application.
 - 6) Provide any additional information and references that will assist in understanding your response to the Sources Sought.

5.2 Submission Instructions

5.2.1 Submit Demonstration applications to the SMDP electronically by **11 May 2018**. **All applications to participate in this demonstration must be submitted to the SMDP electronically, via email to Stiletto@navy.mil**. Applications shall be clearly marked with Sources Sought # CD18-02.

5.2.2 All applications shall be submitted in the Portable Document Format (PDF) file format and shall be less than 2 MB in size.

5.2.3 You will receive an email within two business days verifying your application was received.

5.2.4 If you need any assistance with application submittal please contact Cali Carpenter (cali.carpenter.ctr@navy.mil). Multiple applications addressing different radar systems may be submitted. Each application must address only one system.

5.2.5 Demonstration applications must be submitted by 11 May 2018. Submission of a demonstration application does not guarantee an invitation to demonstrate.

6. Proposal Information, Technical Data, and Other Information

6.1 The SMDP will disclose respondents' information only to authorized Government and non-Government third-parties for purposes of evaluation. Information submitted in response to this Sources Sought constitutes the written consent to such disclosure. The Government will require all non-Government third-parties to sign a certificate of non-disclosure before such third-parties gain access to any respondent's information.

6.2 All information received in response to this Sources Sought that is marked "Proprietary" will be handled accordingly. Responses to the Sources Sought will not be returned. Respondents are solely responsible for their expenses associated with responding to this Sources Sought. The SMDP reserves the right to accept, reject, or use without obligation or compensation, any information submitted in response to this Sources Sought that is not proprietary. The Government will not use proprietary information submitted from any one firm to establish future capability requirements.

The Government does not commit to providing a response to any comment or question.

7. Additional Information

7.1 Applications will be evaluated by designated stakeholders that may include representatives from the Office of the Secretary of Defense (OSD), the Department of Homeland Security (DHS), and/or various operational commands. Responses must include all of the information requested in section five. Evaluation of the responses will be based on the following criteria, all of which are of equivalent importance to the evaluation:

- 1) Evaluation of the proposed technology with respect to;
 - a. Present and future uses and predicted performance.
 - b. Compatibility in the maritime environment as described above.
- 2) Capability of the technology to meet CD objectives.
- 3) The technology's relevance or adaptability.
- 4) The technology's technical maturity.

7.2 One or more respondents may be asked to sign a CRADA. The CRADA is the principal mechanism used by Government laboratories to engage in collaborative efforts with non-federal partners to achieve the goals of technology transfer. The CRADA is also intended to take into account the needs and desires of private industry when commercializing a product such as the need for confidentiality.

8. Use of Information

The purpose of this notice is to gain information leading to collaboration for development of technology capabilities. All proprietary information contained in the response shall be clearly marked. Any proprietary information contained in response to this request will be properly protected from any unauthorized disclosure..

9. Special Notice

The technology developer's attention is directed to the fact that Federally Funded Research and Development Centers (FFRDCs) or contractor consultant/advisors to the Government will review and provide support during evaluation of submittals. When appropriate, non-Government advisors may be used to objectively review a particular functional area and provide comments and recommendations to the Government. All advisors shall comply with procurement integrity laws and shall sign non-disclosure and rules of conduct/conflict of interest statements. The Government shall take into consideration requirements for avoiding conflicts of interest and ensure non-Government advisors comply with safeguarding proprietary data. Submission in response to this Sources Sought constitutes approval to release the submittal to Government support contractors.

10. FAQs

1. What is the Stiletto Maritime Demonstration Program?

The SMDP provides physical, personnel, and program infrastructure to industry, government, and academic system developers as well as warfighting commands to evaluate technologies in a realistic maritime environment. The Stiletto physical infrastructure consists of the high speed Stiletto craft with a Command Information Center (CIC), Launch and Recovery (L&R) for an 11M Rigid Inflatable Boat (RIB), arch space for sensors, flight deck for Unmanned Aerial Vehicle (UAV) L&R, and electronic network infrastructure with wide band SATCOM. The program infrastructure provides the process by

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which the system developers can demonstrate technology systems and warfighting commands can evaluate for future requirements in a safe, legal, and creative manner.

2. Who manages and pays for Stiletto?

The Assistant Secretary of Defense for Research & Engineering, Rapid Reaction Technology Office (RRTO) sponsors Stiletto for demonstrations. The craft is in the custody of and is operated by NSWCCD Combatant Craft Division.

3. Who pays for what?

The Stiletto program provides engineering assistance to integrate systems aboard the craft and develop a demonstration plan to achieve technical goals. The crew, craft and fuel for demonstration support are provided by the Stiletto program. Costs specific to running the technology developer's technology, as well as the technology developer's travel costs will be at the technology developer's expense.

4. Who are the authorized Government and non-Government third-parties that information may be disclosed to?

The authorized Government and non-Government third-parties are either subject matter experts that are part of the application evaluation process or other DoD organizations working on similar projects.

5. What is the anticipated proposal review schedule?

Applications for this demonstration will be reviewed by 18 May 2018. The applications will be evaluated by members of the Stiletto staff and stakeholders from various operational commands and government organizations.

6. What Technology Readiness Level (TRL) is expected?

Material solutions should be at a TRL of 6 or greater for the purpose of demonstrations.

7. Can you provide specifications or technical information regarding Stiletto's infrastructure and equipment?

Important specifications or other technical information needed for an application can be requested through Stiletto@navy.mil.