

**Strategic & Spectrum Missions Advanced Resilient Trusted Systems (S²MARTS)  
Request for Solutions (RFS)**

*in support of*

**Dynamic Spectrum Management @ B5G Tactical Edge**

**Project No. 22-02**

**A. OPPORTUNITY OVERVIEW**

<b>Project Title</b>	Task Area 3- Dynamic Spectrum Management @ B5G Tactical Edge
<b>Project Sponsor</b>	Naval Surface Warfare Center (NSWC) Crane WXQN on behalf of Office of the Undersecretary of Defense (OUSD) Research and Evaluation (R&E)
<b>Contracting Activity</b>	Naval Surface Warfare Center (NSWC) Crane on behalf of OUSD R&E
<b>Questions Deadline</b>	03/29/2022, 12:00PM ET
<b>Response Deadline</b>	04/29/2022, 12:00PM ET
<b>Anticipated Project Budget</b>	\$15,000,000 (details below)
<b>Resultant Award Type</b>	Prototype Other Transaction Agreement (10 U.S.C. § 4003)

*All respondents must be active NSTXL consortium members.*

**B. PROTOTYPE PROJECT DETAIL**

- Authority:** 10 U.S.C. § 4003, "Authority of the Department of Defense to Carry Out Certain Prototype Projects"
- Project Background & Current Capability:**

With Federally allocated spectrum in the mid-band (3 GHz) being explored for potential sharing with commercial 5G systems, effective new solutions for Dynamic Spectrum Management (DSM) is a priority for the Department of Defense (DoD). Future approaches to dynamic access will exploit the flexibility offered by 5G systems to explore how sharing approaches between co-primary (Federal/non-Federal) systems may be liberated from its major constraint - need for significant pre-planning and general lack of desired agility to deal with dynamically changing scenarios and EW, so as to demonstrate success at operational tempo. Besides the flexible space-time granularity inherent in 5G Physical Layer (PHY), network softwarization and dis-aggregation (afforded by open interfaces and/or open-source component-based implementations) also unveils opportunities for integration of autonomy and intelligence to significantly move the state-of-art. As a relevant benchmark, current spectrum sharing systems like what was implemented for the Citizens Broadband Radio Service (CBRS) for 3.55-3.7 GHz use a configuration of deployed sensors (the so-called Environmental Sensing Capability [ESC]) to detect incumbent presence in the CBRS band. Thereafter the CBRS band devices that seek to use unused channels interface with a commercially maintained Spectrum Access System (SAS) database for subsequent resource allocation.

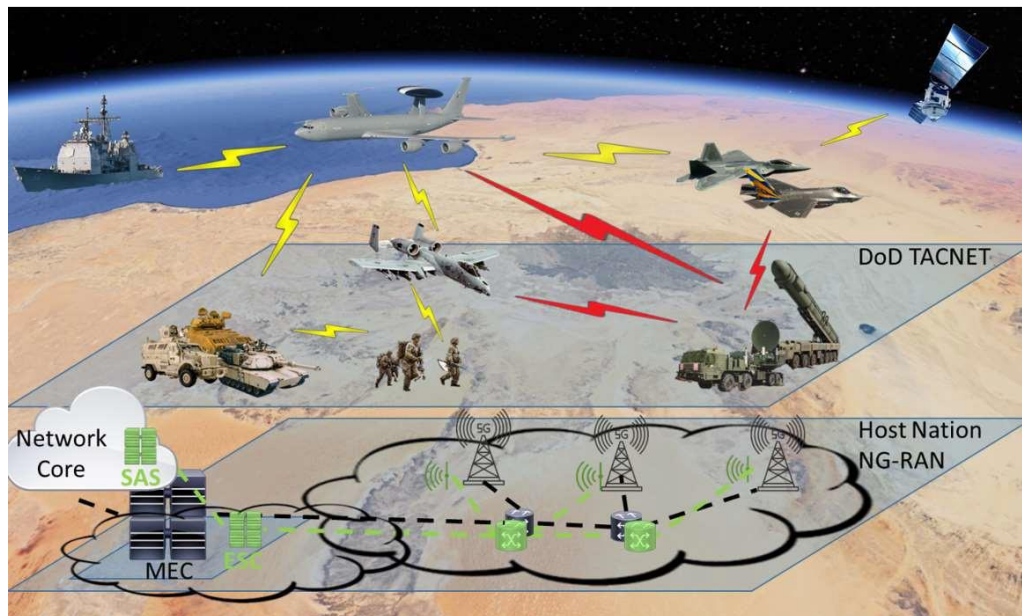


Fig. 1: DoD Tactical Network Operations with 5G Radio Access Network (RAN) Infrastructure

While CBRS is an adequate solution for *slowly moving* Federal systems (shipborne radar), the current systems designed to achieve operational latencies shown in Table 2 below are simply inadequate for airborne and other rapidly moving Federal systems. B5G spectrum management systems are expected to significantly improve both end-to-end system latencies and reliability to enable sharing with rapidly moving Federal systems whose trajectories are unknown (to the 5G network). As such fundamentally new sensor, new platform design, and new deployments are needed for enabling such sharing, by exploiting next generation computing and information infrastructures to achieve expected order-of-magnitude improvements desired in Table 2. Of particular relevance is the potential of novel 5G network components such as function virtualization, network slicing, Open-RAN (O-RAN), RAN sharing, and multi-access edge computing. This effort specifically invites solutions involving the above elements applied to dynamic spectrum planning/allocations for the challenging scenarios described. The new softwarized and modularized O-RAN implementations for future 5G networks along with (near) real-time RAN Intelligence Controller (RT-RIC) are expected to enable dynamic spectrum decision-making in the sub 1 sec time scale. Finally, we look ahead to new information sharing architectures in collaborative scenarios that enable bi-directional (near) real-time operation: i.e., whereby Federal systems may also adapt to 5G network operations. Software Defined Network (SDN) based Multi-access Edge Computing (MEC) allows efficient separation of control and data planes to reduce end-to-end latencies within the network control decision loop and provide requisite fine grain control in time, frequency, and space for spectrum access. The proposed effort must include design of the (near) RT-RIC that host a new application layer (kAPPs) to demonstrate:

1. Creation of real-time database of available resources (time, frequency, space, and bandwidth) and determination and allocation of 'spectrum slices'
2. Artificial Intelligence and Machine Learning (AI/ML) driven spectrum resource allocation algorithms within a control loop framework demonstrating cognitive operations, cognizant of performance vs resiliency trade-offs in presence of adversarial operations.

Themes	Current	Objective
1. Sensing Architectures for Federal/Commercial 5G Spectrum Sharing	Unidirectional sharing: 5G systems react to presence of Federal incumbent	Progress towards true 'bi-directional' sharing regime, while preserving information integrity
2. Edge Compute/Networking Solutions for Low Latency/High Reliability fine-grained Spectrum sharing	Largely pre-planned spectrum decisions with little operational flexibility	Novel Controller Algorithms and Applications stack design for dynamic operations

Table 1: Major Proposal Components

Proposals are sought for DSM system design for Federal/commercial 5G spectrum sharing for potential integration into next-generation DoD all-domain operations. Proposers Phase I-II efforts should be primarily directed to: outline of novel design concepts and approaches for dynamic spectrum access/management based on system components comprising of spectrum use databases, real-time environment sensing and information sharing interfaces across the participating networks. System design should include a full description of all relevant sub-system (incumbent and secondary) parameters and the proposed effort should expand on achieving and demonstrating superior integrated tactical network performance trade-offs that can be operationalized via novel RD&E vectors. Specifically, the proposal must describe a plan for prototyping and testing within a laboratory environment during Phase II. It must also describe the key elements of the design.

Exemplar RD&E vectors may include (but not limited to):

- Analysis of new degrees of freedom (d.o.f.) – time and space granularity offered by 5G nodes with massive input massive output (MIMO) enablement
- New distributed sensor net design for incumbent detection
- Database, 5G interfaces and protocol stack component design for bi-directional sharing
- Software-defined, multi-access edge platform for dynamic spectrum management

Proposals should clearly articulate – in a section dedicated to this aspect – the underlying assumptions of the DSM architectural design proposed along with highlights of the novel aspects and description of a clear pathway for prototyping and testing of spectrum allocation decisions. For purposes of this effort, the target frequency band of interest is 3.1-3.55 GHz band sharing that supports numerous DoD operated fixed/mobile air, shipborne, and terrestrial radar systems for various mission-critical operations. In addition, this band is also allocated for aeronautical radio navigation and other non-Federal use. Radar altimeter (4.2-4.4 GHz) operation may also be impacted by adjacent channel interference (3.7-4.2 GHz) by 5G operations in this band.

<b>System Parameters/Components</b>	<b>Current (CBRS)</b>	<b>Objective</b>
<p><b><u>Latency Sensitivity</u></b> Environmental Sensing Capability (ESC): Latency of incumbent detection with associated reliability</p> <p>Database/Compute System: 5G Channel Evacuation Time</p> <p><b><u>Novel Extensions</u></b> Bi-Directional Sharing</p> <p><b><u>Future Network Components for Spectrum Sharing</u></b>  RT-RIC Design Network Slicing O-RAN/RAN Sharing Multi-Access Edge Compute AI/ML Approaches</p>	<p>60 Seconds</p> <p>240 Seconds</p>	<p>&lt;1 Second</p> <p>&lt; 5 Seconds</p> <p>Define information interfaces to enable Federal system operation to adapt to 5G/B5G presence; minimize coordination zones subject to performance metrics</p> <p>Define new DSM architecture, demonstrate fine-grained sharing while at Operational Tempo</p>

Table 2: Key Research Objectives

**3. Desired End-State & Success Criteria:**

**1. Description of Phases**

Due to the breadth of 5G application areas and where these innovation R&D projects may take us, OUSDR&E anticipates the possibility of making multiple awards. The IB5G-OTA prototype project under the RFS is anticipated to be released and to be executed in three (3) phases, each of 12-month periods of performance.

It is the intent of OUSD R&E to award Project Orders that cover Phase I and Phase II. OUSD R&E would like a down select to occur at the end of Phase II and plans to award Phase III to the down selected performer(s). OUSD R&E understands that the down select process takes time and is planning a 6-month gap between Phases II and III to allow for the down selection and award of Phase III.

Success will be measured at each phase and for the overall project. Overall project success is defined as the design, development, test, and demonstration of a DSM system prototype that meets two objectives:

- ESC latency of Incumbent Detection shall meet a threshold requirement of less than 1 second
- Time for 5G System RAN to Vacate the band and/or channel, shall meet a threshold requirement of less than 5 seconds

Success criteria for each Phase is as follows:

Phase I: (Initial Study and Design Iteration) Develop and refine hardware (HW) and software (SW) architecture concepts for dynamic spectrum sharing based on combination of

- a. Spectrum sensornet + in-situ processing
- b. Real-time information sharing between Federal/commercial networks
- c. Softwarized + virtualized 5G network enabled spectrum allocation.

Spectrum manager design is to be finalized for Phase II via comprehensive model-based analysis & simulation, resulting in full-system Key Performance Indicators (KPIs).

Phase II: (Build and Demonstrate Initial Prototype) Build lab prototype for:

- a. DSM control application and related algorithms for managing spectrum resources.
- b. Evaluate performance for a Dynamic Spectrum Access (DSA) xApp for SDN-RAN Controller.
- c. Demonstrate benefits of dynamic slicing augmented DSA in congested and contested environment.

OUSD R&E plans to release the final Phase III requirements within 6 months of starting Phase II. This is to allow OUSD R&E time to finalize the plans and allow the vendors time to submit new proposals for Phase III activities. The proposals will be a reviewable deliverable that will be part of the down select process.

Phase III: (At scale prototype demonstration) At the end of Phase II, OUSD R&E reserves the right to down select any number of vendors, including all or none, for Phase III. The proposal and associated awardees will be selected based on meeting performance targets in Phases I-II, based on a performance review/down select at the end of Phase II, and based on the proposal submission for Phase III. Phase III vendors shall transition their SW/HW prototype to a specified DOD, or other Federal, testbed infrastructure for at scale prototype demonstration Phase III efforts.

## **2. Areas of Focus for DSM System Performance**

It is desirable for purposes of DSM system design objectives, to have a clear set of system performance criteria that focuses on the end-to-end system performance. For purposes of performance measurements in lab and field testing for all Phases, system KPI's should be defined in more detail in the proposal response. The KPIs shall include, but are not to be limited to the following system performance categories:

- In Spectrum Sharing Scenarios:
  - ESC latency of Incumbent Detection shall meet a threshold requirement of less than 1 second
  - Time for 5G System RAN to Vacate the band and/or channel, shall meet a threshold

- requirement of less than 5 seconds
- Efficiency of signaling/processing across the bi-directional sharing interface(s)
- In Adversarial/EW Scenarios (under various attack scenarios and various User Equipment (UE) activities):
  - 5G System Capacity with DSM system enabled vs disabled
  - 5G System Accessibility with DSM system enabled vs disabled
  - 5G System Retainability with DSM system enabled vs disabled
- System specific KPIs such as:
  - Size, Weight, and Power (SWaP) burden(s) of the DSM system HW
  - Size, processing burden/latency, and power consumption of the DSM system SW

**4. Potential Follow-On Activity:**

End of Effort/Transition: OUSD R&E is not planning any follow-on activities after Phase III. While OUSD R&E will not be transitioning the projects, other OUSD offices and other DoD components may reach out for follow-on efforts. The following would apply in that situation:

1. Upon successful completion of this prototype effort, the Government anticipates that a follow-on production effort may be awarded via either contract or transaction, without the use of competitive procedures if the participants in this transaction successfully complete the prototype project as competitively awarded from this document. The prototype effort will be considered successfully complete upon demonstration of the aforementioned technology objectives.
2. Successful completion for a specific capability may occur prior to the conclusion of the project to allow the Government to transition that aspect of the prototype project into production while other aspects of the prototype project have yet to be completed.
3. Requirements of other potential follow-on activities could involve, though not limited to, continued development and baseline management, fielding, sustainment, training, further scaling of the solution, integration of future capabilities, or integration of the solution with other capabilities.

**5. Project Deliverables:**

No.	Title	Description	Frequency	Delivery Method
1	Project Plan	Project Plan with detailed outline of all Phases and planned test. Shall be vendor format. Shall include plans for cost, schedule, and technical development progress.	Once/ 10 days before Formal Kick-off meeting	Digital Report
2	Monthly Status Reports & Monthly Status Report Meeting	Present cost, schedule, and technical status information covering all funded development. Describe past month progress, next month objective, milestone accomplishments and potential issues/risks identified.	Once each month	Digital Report with Teams Meeting brief

		Address CSWF requirements. Shall be vendor format.		
3	Monthly Status Report Minutes	Detailed meeting minutes covering the Monthly status report meetings. Shall include a summary of topics discussed and action items from the meeting. Shall be vendor format.	Within 1 week of the Monthly Status Report meeting	Digital Report
4	Quarterly Technical Interchange Meeting (TIM)	Once a quarter, in addition to the monthly written report, the vendor shall provide a technical deep dive brief that focuses on their technological progress and their proposed solutions development status. Shall be vendor format.	Once each Quarter	Digital Report with in-person review meeting (May be Teams meeting pending COVID restrictions)
5	Quarterly TIM Minutes	Detailed meeting minutes covering the Quarterly TIM meetings. Shall include a summary of topics discussed and action items from the meeting. Shall be vendor format.	Within 1 week of the Quarterly TIM meeting.	Digital Report
6	Formal Test Plan	Detailed test plan describing test and methodologies to be conducted. Shall be vendor format. A formal test event is one in which the vendor wishes to collect official data for their project. Lab check outs and engineering data collections are considered “informal” events. Shall be approved by the USG team prior to the Formal test event.	4 weeks before any formal test event	Digital Report
7	Formal Test Report	Detailed test report describing test and methodologies that were conducted during a formal test. Shall be vendor format.	4 weeks after any formal test event	Digital Report
8	Phase I Draft Design report and Review	Report shall be comprised of, but not limited to, the following elements: <ul style="list-style-type: none"> <li>• Detailed description of the Design</li> <li>• Methods to Ensure the success of the design</li> <li>• Quantifiable network performance goals and enhancements</li> </ul> Shall be vendor format.	1/Once No Later Than four (4) months from project award.	Digital Report with in-person review meeting (May be Teams Meeting pending COVID restrictions)
9	Phase I Final Report	Summary of all technical developments and milestone accomplishments. Defined outcomes of Phase I with forecasted project plan and outcomes for following Phases. Shall be vendor format	1/Once no later than two (2) months from Phase II award	Digital Report with in-person review meeting
10	Phase II Final Design Review	Report shall be comprised of, but not limited to, the following elements: <ul style="list-style-type: none"> <li>• Detailed description of the final Design</li> <li>• Methods to Ensure the success of the design</li> <li>• Quantifiable network performance goals and enhancements</li> </ul> Shall be vendor format.	1/Once No later than two (2) months from Phase II award	Digital Report with in-person review meeting
11	Phase II Demonstration of Initial Prototype	Report shall be comprised of, but not limited to, the following elements: <ul style="list-style-type: none"> <li>• Detailed description of the prototype test results</li> </ul>	1/Once No later than eight (8)	Digital Report with in-person review meeting



		<ul style="list-style-type: none"> <li>• Analysis of test results in comparison to initial KPIs and thresholds</li> <li>• Plan for and improvements and corrections needed for scale demonstration and transition. Shall be vendor format.</li> </ul>	months from Phase II award	
12	Phase II Final Report	Summary of all technical developments and milestone accomplishments. Defined outcomes of Phase II with forecasted project plan and outcomes for Phase III's at scale demonstration Shall be vendor format.	1/Once No Later than 30 days prior to Phase end	Digital Report
13	New Proposal per Phase III Requirements	New Proposal per the new Phase III deliverables which will be sent to the vendors in Phase II. Shall be vendor format.	1/Once No Later than 30 days prior to Phase end	Digital Report

## 6. Anticipated Budget

\$ 15,000,000 total

The estimated budget is anticipated to be split among the three phases with \$6,000,000 anticipated for Phase I, \$6,000,000 anticipated for Phase II, and \$3,000,000 anticipated for Phase III.

This value represents what is currently available for the subject project at the time of RFS release. This value is subject to change and is being provided for planning purposes only.

Respondents are encouraged to clearly explain how much of their solution can be developed for the advertised amount. Capabilities or project phases that will require additional funding beyond the project budget must be identified as such.

## 7. Anticipated Number of Awards

The Government intends to award at least one (1) Other Transaction Agreement on a fixed-price basis as a result of this RFS. The Government also reserves the right to execute fewer awards than anticipated, select aspects of a proposal for award, or not select any of the solutions proposed. The Government will collaborate with prospective awardees prior to finalizing the award.

Partial responses addressing only a subset of the project's overall objectives are not permitted for this effort.

## 8. Supporting Attachments:

1. Section 889 Prohibition and Reporting
2. Section 889 Verification and Representation

## C. SECURITY INFORMATION & RESTRICTIONS

### 1. This RFS, to include attachments, has been released in accordance with:

Distribution Statement A: Approved for public release



## 2. Security classification & other restrictions:

- Awardees/Prototype Level Performers are not required to possess an active facility clearance to perform in support of the subject project. Respondents are restricted to domestic, United States based companies only.
- Compliance with International Traffic in Arms Regulation (22 C.F.R. §§ 120-130) is required at time of proposal submission.
- Cyber Security Workforce (CSWF) Qualifications and Reporting Tasking outlined in this RFS may require personnel to perform Cyber IT/Cybersecurity functions, therefore shall meet the requirements of DoD Manual 8570.01M Cyber Security Certifications and Requirements (<https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodm/857001m.pdf?ver=2017-04-17-134634-203>). The Performer shall ensure that personnel who are categorized as working within the DoD IA workforce meet the appropriate requirements of DoD Manual 8570.01M. The performer shall provide a list of all personnel assigned with personnel performing Cyber IT/Cybersecurity functions as a part of the monthly Performer's Monthly Status Report (Deliverable identified in Section 5 above). The report shall include employee name, list of applicable Cyber IT/Cybersecurity function category/level required certifications and fulfillment status and CL status. New hire information for tasking requiring Cyber IT/Cybersecurity functions shall be submitted to the Agreements Officer Representative (AOR) at least 7 days prior to employee beginning performance of any Cyber IT/Cybersecurity functions on this tasking.  
  
New hire information shall include name, list of applicable Cyber IT/Cybersecurity functions category/level, required certifications and fulfillment status to include a copy of the certification documentation. Performers are encouraged to provide new hire information to ensure Government concurrence with qualification to perform Cyber IT/Cybersecurity functions. Per regulations, Performer personnel who do not have proper and current certifications shall be denied access to DoD information systems for the purpose of performing information assurance functions. and therefore may not be allowed to perform nor charge under this Agreement.
- By submitting a response, respondents shall certify whether covered telecommunications equipment or services **will or will not** be included as a part of its offered products or services to the Government in the performance of this effort. RFS Attachment 2 includes additional detail regarding the representation which must be signed and returned with any submissions.

### What is included under "covered telecommunications equipment or services"?

- ✓ Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities);
- ✓ For the purpose of public safety, security of Government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);
- ✓ Telecommunications or video surveillance services provided by such entities or using such equipment; or
- ✓ Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

**3. All respondents/prospective performers must be compliant with the following:**

- DoDI 8582.01, “Security of Unclassified DoD Information on Non-DoD Information Systems” and DoDM 5200.01 Volume 4, “DoD Information Security Program: Controlled Unclassified Information”.
- NIST SP 800-171r2, “Protecting Controlled Unclassified Information in Non-Federal Information Systems and Organizations”
- Research findings and technology developments arising from the resulting proposed solution may constitute a significant enhancement to the national defense and to the economic vitality of the United States. As such, in the conduct of all work related to this effort, the selected performer must comply strictly with the International Traffic in Arms Regulation (22 C.F.R. §§ 120-130), the National Industrial Security Program Operating Manual (DoD 5220.22-M) and the Department of Commerce Export Regulation (15 C.F.R. §§ 730-774)
- NIST SP 800-53r5, “Security and Privacy Controls for Information Systems and Organizations”

**D. DESIRED LEVEL OF DATA RIGHTS**

**1. The Government desires the following restrictions/limitations as it relates to Data Rights allocated under the subject effort:**

The Government’s ability to --	Without Any Restrictions	Without Restriction and Within Government Only	With Performer Approval Only
USE the technical data	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MODIFY the technical data	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
REPRODUCE the technical data	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DISPLAY the technical data	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RELEASE the technical data	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
DISCLOSE the technical data	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AUTHORIZE NON-GOVERNMENT PARTIES to use, modify, reproduce, display, release, and disclose	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- The Government intends to maintain the limitations identified above for **5 years** from project award.
- Upon expiration of the time period identified immediately above, the restrictions/limitations **will transition and the Government shall have unlimited rights in data.**

**2. The selected prototype-level performer –**

will be expected to provide Government Purpose Rights: The right to use, modify, reproduce, release, perform, display, or disclose technical data within the Government without restriction. This also includes the rights to release or disclose technical data outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform, display, or disclose technical data for United States government purposes. This level of restriction is set at five-years but may be negotiated & tailored to a specific project. The five-year period, or such other period that may be negotiated, would commence upon execution of the agreement that required development of the items, components, or processes or creation of the data. The performer will have the exclusive right, including the right to license others, to use technical data in which the Government has obtained government purpose rights under this

agreement for any commercial purpose during the five-year period. Upon expiration of the five-year period (or other negotiated length of time), the Government will receive unlimited rights in the technical data and computer software

3. **Respondents may elect to propose alternative options for the Government’s consideration & subsequent approval via negotiations.**

## **E. PROCESS OVERVIEW & INSTRUCTIONS**

### **1. Submission Process for Questions & Proposals**

#### **a. Questions**


To submit any questions, visit the opportunities page at [www.nstxl.org/opportunities](http://www.nstxl.org/opportunities), select the “Current” tab, locate the respective project, and select “Submit a Question”. Please refer to Page 1 for associated deadlines.

#### **b. Proposals**

To submit your proposal, visit the opportunities page at [www.nstxl.org/opportunities](http://www.nstxl.org/opportunities), select the “Current” tab, locate the respective project, and select the “Submit Proposal” link. You must have an active account and be logged-in to submit your response.

Respondents are solely responsible for the timeliness of their submission and are cautioned that late submissions will not be accepted for evaluation. It is strongly recommended that interested parties submit their proposal as early as possible to uncover any potential technical or account issues. Please notify NSTXL immediately ([membership@nstxl.org](mailto:membership@nstxl.org)) if technical issues occur during the submission process and/or if confirmation related to membership status is required. Please refer to Page 1 for associated deadlines.

## 2. Proposal Structure & Assessment Methodology

 S²MARTS	(1) Initial Review	>>>	(2) Selection
ANTICIPATED TIMELINE*	<b>Due:</b> 04/29/2022, 12:00PM ET		<b>Award:</b> 09/2022
TECHNICAL	<b>Written Proposal</b>  <b>Page Limit:</b> 15 <b>Format:</b> MS Word and/or Adobe PDF		<b>Award of Prototype Level Project</b>
PRICE	<b>Standard Price Proposal</b>  <b>Page Limit:</b> 5 <b>Format:</b> MS Excel for pricing information; MS Word and/or Adobe PDF for supporting narratives		

*\*Anticipated dates are subject to change and are provided for planning purposes only.*

The Government reserves the right to utilize non-government advisors from the following companies during the solutions review and assessment process:

- Avantus Federal
- MITRE
- Georgia Tech Research Institute (GTRI)
- Parsons Corporation
- Johns Hopkins University Applied Physics Laboratory (JHU-APL)
- Massachusetts Institute of Technology Lincoln Laboratory (MIT-LL)
- University of Maryland Applied Research Laboratory for Intelligence and Security (ARLIS)

## 3. Format Detail

- a. 12-point font (or larger) for all response narratives; smaller type may be used in figures and tables but must be clearly legible.
- b. Page size of 8.5 x 11 inches.

- c. The following items are not included within the page count: Cover page, Table of Contents, supporting Foreign Owned, Controlled, or Influenced (FOCI) documentation, Section 889 Representation, and the Task Description Document/Statement of Work.

#### 4. Contents of Response (Cover Page, Technical Response, Price Response)

a. Proposal Cover Pages **must** identify the following:

- Company name
- Confirmation of active NSTXL Membership (e.g., “Verified NSTXL Member”)  
*Reminder: Contact [membership@nstxl.org](mailto:membership@nstxl.org) with any questions or requests for confirmation.*
- Commercial and Government Entity (CAGE) Code (if available)
- Level of facility clearance (if available)
- Street Address
- Primary Point of Contact (with title, email address and phone number)
- Government Cognizant Security Office (CSO) responsible for monitoring the company’s National Industrial Security Program Standards compliance (with address, email address and phone number)
- Company’s security officer point of contact (with title, email address and phone number)
- All locations where work will be performed
- Business Size
- Business Type (Traditional or Non-Traditional)
- Status of U.S. ownership
- If the proposed approach requires any exceptions to this RFS
- If the proposed approach addressed all RFS objectives or a partial subset of the RFS objectives
- The applicable 10 U.S.C. § 4003 eligibility criteria (select **one** of the following)
  - There is at least one nontraditional defense contractor or nonprofit research institution participating to a significant extent in the project;
  - All significant participants in the transaction other than the Federal Government are small businesses (including small businesses participating in a program described under section 9 of the Small Business Act (15 U.S.C. § 638)) or nontraditional defense contractors; OR
  - At least one third of the total cost of the project is to be provided by sources other than the Federal Government.
    - If resource-sharing is proposed in accordance with 10 U.S. Code § 4003(d)(1)(C), then the non-Federal amounts counted as provided, or to be provided, by parties other than the Federal Government may not include costs that were incurred before the date on which the OT agreement becomes effective. Costs offered as a resource-share that were incurred for a project after the beginning of negotiations, but prior to the date the OT agreement becomes effective, may be counted as non-Federal amounts if and to the extent that the Agreements Officer determines in writing that: (1) the party other than the Federal Government incurred the costs in anticipation of the OT agreement; and (2) it was appropriate for the entity to incur the costs before the OT agreement became effective in order to ensure the successful implementation of the OT agreement



**What is a nontraditional defense contractor?**

An entity that is not currently performing and has not performed, for at least the one-year period preceding the solicitation of sources by the Department of Defense for the procurement or transaction, any contract or subcontract for the Department of Defense that is subject to full coverage under the Cost Accounting Standards (CAS).

*Review 48 CFR § 9903.201-1 for a list of CAS exemptions.*

**b. Technical responses must address the following topics:**

TOPIC	INSTRUCTIONS
<p><b>Solution Narrative</b></p>	<ul style="list-style-type: none"> <li>• Describe the approach used to design/deliver a unique prototype solution for the prototype technology objectives.</li> <li>• Include a discussion on schedule and the timing of all project deliverable(s) and other critical milestones</li> <li>• Responses that only address a critical element of the total solution being sought, often referred to as a “partial solution”, must be clearly identified as such.</li> <li>• If the proposed approach will require exception to any aspect of this solicitation, to include attachments, respondents must clearly identify those exceptions within the Technical Volume of their response. All respondents are encouraged to review the baseline S²MARTS Performer’s Agreement available within the NSTXL Members Portal (nstxl.org).</li> </ul>
<p><b>Team Overview</b></p>	<ul style="list-style-type: none"> <li>• Identify each subcontractor and include the following: <ul style="list-style-type: none"> <li>– Summary of their role in support of the proposed concept</li> <li>– Commercial and Government Entity (CAGE) Code (if available)</li> <li>– Level of Facility Clearance (if available)</li> <li>– Address</li> <li>– Point of contact (with title, email address and phone number)</li> <li>– Business size</li> <li>– Business Type (Traditional or Nontraditional)</li> <li>– Status of U.S. ownership</li> </ul> </li> </ul> <p><i>Reminder: The responsibility to provide ample proof regarding <b>nontraditional participation to a significant extent</b> lies with the respondent and has a direct correlation to award eligibility.</i></p>
<p><b>Level of Data Rights Proposed</b></p>	<ul style="list-style-type: none"> <li>• The rights offered should be displayed in a manner that allows for ease of discussion in determining trade-offs and potential options for long-term sustainability of the deliverables of this effort.</li> </ul>



	<ul style="list-style-type: none"> <li>• If rights are being asserted at a level <b>less than</b> the Government’s desired level, respondents must provide detail explaining the specific rationale for the assertion.</li> <li>• Any items previously developed with federal funding (and utilized in support of the proposed solution) should clearly identify all individual components funded by the Government and the recipient of the deliverables.</li> <li>• If commercial software is proposed as part of the prototype solution, all applicable software licenses must be identified and included with the response. Note that any software license term or condition inconsistent with federal law will be negotiated out of the license.</li> </ul>
<p><b>Explanation Supporting Eligibility for Award of a Prototype OTA</b></p>	<ul style="list-style-type: none"> <li>• Provide rationale to support the specific eligibility condition that permits award of an Other Transaction to the proposed performer/team.</li> <li>• The responsibility to provide ample proof regarding <i>nontraditional defense contractor participation to a significant extent; small business or nontraditional defense contractor status; or any cost sharing arrangement</i> lies with the respondent and has a direct correlation to award eligibility.</li> </ul> <p style="text-align: center;"><b><u>Questions regarding eligibility?</u></b></p> <p>Contact NSTXL and/or review 10 USC 4003 and the DoD Other Transaction Guide for additional information.</p>
<p><b>Foreign Owned, Controlled, or Influenced (FOCI) Information (if applicable)</b></p>	<ul style="list-style-type: none"> <li>• Identify if the primary performer and/or any sub-performers (to include vendors, suppliers, subcontractors, and teaming partners) are considered under FOCI.</li> </ul> <p style="text-align: center;"><b><u>Supporting documentation may include but is not limited to:</u></b></p> <p style="text-align: center;">Standard Form 328 (Certificate Pertaining to Foreign Interest); Listing of Key Management Personnel; an Organizational Chart; Security Control Agreements: Special Security Agreements; and Proxy Agreements or Voting Trust Agreements.</p>
<p><b>Government Furnished Support</b></p>	<ul style="list-style-type: none"> <li>• Identify if the proposed solution will be dependent on Government Furnished Property (GFP) or other forms of Government support (i.e. information, schematics, laboratory, or facility access).</li> <li>• If the solution is dependent on the Government furnishing specific information or items, describe the impact to the solution if the request cannot be met.</li> <li>• All GFP proposed and/or required for the respondent to perform this effort shall provide documentation that the proposed Government property usage has been approved by the cognizant Contracting Officer or Agreements Officer.</li> </ul>
<p><b>Compliance</b></p>	<ul style="list-style-type: none"> <li>• Respondents must address each mandatory restriction/requirement identified within this RFS and explain how each regulation or standard is currently, or will be met.</li> </ul> <p style="margin-left: 40px;">✓ <b>Note:</b> If exceptions to any of the restrictions/compliance requirements exist, respondents must fully explain the basis for the exception and how any correlating risk will be mitigated.</p>

	<ul style="list-style-type: none"> <li>In addition to the mandatory representation included as Attachment 2, respondents <b>must include</b> the following statement within the Compliance section (with the applicable answer checked):             “[Company Name] represents that it [ <input type="checkbox"/> ] <b>will</b>, [ <input type="checkbox"/> ] <b>will not</b> provide covered telecommunications equipment or services to the Government in the performance of any contract, subcontract or other contractual instrument resulting from this solicitation.”             ✓ <b>Note:</b> If your company <b>will</b> provide covered telecommunications equipment or services, please contact <a href="mailto:S2MARTS@nstxl.org">S2MARTS@nstxl.org</a> for additional mandatory disclosures that must be completed &amp; submitted with your response (at least 72 hours in advance of the response deadline).</li> </ul>
<b>Organizational Conflicts of Interest</b>	<ul style="list-style-type: none"> <li>All responses must disclose and address potential conflicts of interest and any proposed mitigation</li> <li>If OCI's are not present, respondents must include a statement within the Technical Volume that no OCI's are present.</li> </ul>
<b>Task Description Document/ Statement of Work</b>	<ul style="list-style-type: none"> <li>Provide a Task Description Document (TDD) outlining the project tasks to be performed along with schedule milestones and delivery dates required for successful completion.</li> <li>It is anticipated that, if selected, the proposed TDD will be incorporated into the resultant prototype-level Project Order, similar to a Statement of Work (SOW).</li> <li>Respondents are encouraged to be concise but thorough when outlining their TDD/SOW. The TDD/SOW may be submitted as an appendix or a separate file as part of the proposal.</li> </ul>

### 5. Contents of Pricing Response

Note: The Government reserves the right to seek additional detail related to pricing if a conclusive fair & reasonable determination cannot be achieved. Respondents are encouraged to provide thorough & detailed responses (to the maximum extent practicable) to reduce likelihood of schedule delays and increase the Government’s understanding of the proposed concept.

TOPIC	INSTRUCTIONS
<b>Price Breakdown</b>	<ul style="list-style-type: none"> <li>Delineate key pricing components and show clear traceability to the phases and/or milestones of the Technical Response. At a minimum, key pricing components include:               <ul style="list-style-type: none"> <li>Labor Total(s), Other Direct Costs/Material Total(s), any license prices/fees, and subcontractor/vendor/sub-performer price(s).</li> </ul> </li> <li>Data should must be organized &amp; clearly identified by technical objective, milestone, and/or phase proposed (if phasing is applicable).</li> </ul>
<b>Supporting Narrative</b>	<ul style="list-style-type: none"> <li>Include a brief narrative that explains your pricing structure and maps the proposed prices to the solution’s technical approach.</li> </ul>
<b>Payable Milestone Schedule</b>	<ul style="list-style-type: none"> <li>The overall total price should be divided among severable increments that align to a proposed milestone payment schedule. Milestones are not required to match actual expenditures but should realistically align to the effort expended or products delivered.</li> </ul>

	If assistance is needed, please visit the NSTXL Members portal for template support or contact our team.
<b>Innovation &amp; Scalability</b> <i>(if applicable)</i>	<ul style="list-style-type: none"> <li>Any additional features or beneficial capabilities that extend beyond the currently requested technical objectives shall be separately priced for the Government’s consideration.</li> </ul>
<b>Price Impacts of Data Assertions</b> <i>(if applicable)</i>	<ul style="list-style-type: none"> <li>If limited or restricted rights are being asserted within the response, provide a table that includes prices if the Government elects to purchase increased level of rights.</li> </ul>
<b>Supporting Information</b>	<ul style="list-style-type: none"> <li>Inclusion of supporting information, such as a Basis of Estimate, may substantially expedite evaluation of your response.</li> </ul>

**F. Solution Review & Assessment**

Compliant responses will be evaluated with consideration given to:

**Demonstrated understanding and overall technical merit of the response;**  
**Feasibility of implementation; and,**  
**Total project risk (related to technical focus areas, price, schedule and/or compliance)**

- The Government will evaluate the degree to which the proposed solution provides a thorough, flexible, and sound approach in response to the prototype technical objectives. While the technology objectives are of significant importance, responses will be considered as a whole.
- The Government will select the prototype-level performer and award this project, via NSTXL, to the respondent(s) whose solution is assessed to be the most advantageous to the Government, when price, schedule, technical potential, level of data rights, and other factors are considered. The Government reserves the right to award to a respondent that does not meet all the requirements of the RFS.
- The Government reserves the right to reject a submission and deem it ineligible for consideration if the response is incomplete and/or does not clearly provide the requested information.
- Debriefings will not be provided.

**G. Additional Project Information**

- The Government intends to award at least one (1) Other Transaction Agreement as a result of this RFS; however, more than one award may be made if determined to be in the Government’s best interest. The Government also reserves the right to not select any of the solutions proposed.
- Acceptable responses not selected for the immediate award will be retained by NSTXL & the Government for possible future execution and funding. The non-selected proposals will be considered as viable alternatives for up to 36 months. If a proposal (that was not previously selected) is determined to be a suitable alternative, the company will be contacted to discuss any proposal updates and details of a subsequent project award.

- Respondents whose proposals are not selected for the initial award shall not contact the Government or NSTXL to inquire about the status of any ongoing effort as it relates to the likelihood of their company being selected as a future alternative.
- The United States Navy, specifically Naval Surface Warfare Center, Crane Division, maintains release authority on any and all publications or press releases related to this prototype project.
- Unsuccessful respondents will be notified by NSTXL, however, debriefings for this project will not be provided.
- Certain types of information submitted during the RFS and award process of an OT are exempt from disclosure requirements of 5 U.S.C. §552 (the Freedom of Information Act or FOIA) for a period of five years from the date the Department receives the information. It is recommended that respondents mark business plans and technical information that are to be protected for five years from FOIA disclosure with a legend identifying the documents as being submitted on a business confidential basis.
- No classified data shall be submitted within the proposal. To the extent that the project involves DoD controlled unclassified information, respondents must comply with DoDI 8582.01 and DoDM 5200.01 Volume 4. Respondents must implement the security requirements in NIST SP 800-171 for safeguarding the unclassified internal information system; and must report any cyber incidents that affect the controlled unclassified information directly to DoD at <https://dibnet.dod.mil>.
- Export controls (if applicable): Research findings and technology developments arising from the resulting proposed solution may constitute a significant enhancement to the national defense and to the economic vitality of the United States. As such, in the conduct of all work related to this effort, the selected performer must comply strictly with the International Traffic in Arms Regulation (22 C.F.R. §§ 120-130), the National Industrial Security Program Operating Manual (DoD 5220.22-M) and the Department of Commerce Export Regulation (15 C.F.R. §§ 730-774).