

**STRATEGIC & SPECTRUM MISSIONS ADVANCED RESILIENT TRUSTED SYSTEMS  
(S<sup>2</sup>MARTS)  
REQUEST FOR SOLUTIONS (RFS)**

*in support of the*

**ALQ-99 Tactical Jamming Systems (TJS) Low Band Consolidated (LBC)  
And Improved Universal Exciter Upgrade (iUEU)  
PROTOTYPE PROJECT**

Project No. 20-12b

*All prospective respondents must be members of the NSTXL consortium.*

- 1. Project Title:** Low Band Consolidated (LBC) and Improved Universal Exciter Upgrade (iUEU) Prototypes Conceptual Plans
- 2. Prototype Project Sponsor/Requiring Activity:** Naval Surface Warfare Center (NSWC), Advanced Concepts, Code WXS
- 3. Contracting Activity:** NSWC Crane, Code 024
- 4. Project Background & Current Capability:**

EA-18G Growler aircraft integrates advanced airborne electronic attack capabilities with advanced strike capabilities, including advanced weapons, sensors and communications. The block 1 Growler is fitted with up to three AN/ALQ-99 radar jamming pods and has been in use by U.S military forces and its allies to deny targeting information to an enemy. The AN/ALQ-99 Tactical Jamming System (TJS) is the first fully integrated computer-controlled support jamming system.

AN/ALQ-99 TJS are used both offensively and defensively to deny targeting information to any enemy. The AN/ALQ-99 TJS intercepts and automatically processes radar signals and power manages the system's transmitters to effectively jam large numbers of diverse radar threats with very high effective radiated power (ERP). AN/ALQ-99 TJS is capable of performing an electronic countermeasure (ECM) mission which is an electrical or electronic device designed to trick or deceive radar, sonar or other detection systems, like infrared (IR) or lasers.

The AN/ALQ-99 TJS onboard system includes the receiver, processor, and aircrew interfaces. The TJS also includes a selection of mission-configured jammer pods carried as external stores. Each jammer pod contains a ram air turbine generator, two selectable transmitter modules with associated antennas, and a universal exciter which is interfaced with and controlled by the onboard system and aircrew. The modular open architecture of the jammer system, which

facilitates optimizing transmitters and antennas for a given frequency range, also facilitates tailored mission configurations.

One of those modular transmitters is the Low Band Transmitter (LBT). The LBT replaced AN/ALQ-99 TJS Bands 1, 2, and 2/3. The LBT expanded the capability to effectively jam hostile, low frequency radar and communications signals in a tactical environment, and was at the time a Reliability & Maintainability (R&M) upgrade to the current AN/ALQ-99 TJS. The Acquisition Decision Memorandum (ADM) authorizing the LBT program into Full Rate Production (FRP) was approved 18 April 2008. The Low Band Consolidation (LBC) is needed to address current shortfalls in meeting Band 4 Fleet readiness. Increases in EA-18G inventory have increased Band 4 transmitter requirements beyond the current inventory level. Given that Band 4 has been out of production for over 20 years, LBC is needed to replace this aging transmitter and increase inventory of Band 4 capability to meet current Fleet requirements. The LBC program implements an engineering change that will expand the current LBT frequency coverage to include Band 4. This engineering change is not an increase or change in the overall power and capability of the ALQ-99 TJS, but rather is intended to address LBT and Band 4 Diminishing Manufacturing Sources and Material Shortages (DMSMS) and mitigate existing Band 4 inventory shortages.

Another modular component of AN/ALQ-99 TJS is the Universal Exciter Upgrade (UEU). The UEU was the result of an Engineering Change Proposal (ECP) to update the Universal Exciter (UE). The UEU ECP was fielded in June of 1998. It increased reliability and maintainability, added improved modulation wave forms for low frequency radar and communications, command and control jamming, and provisions for coherent and performance countermeasures capabilities. Since the 1998 fielding of the UEU there have only been 4 ECPs to address DMSMS issues within the existing Shop Repairable Assemblies (SRAs). The UEU requires obsolescence upgrades to address scarce component shortages and replacement of aged technology.

## **5. Desired End-State Objective(s) & Success Criteria:**

The Naval Surface Warfare Center (NSWC) Crane Division's primary objective is to determine if a company is capable of designing, engineering, testing and manufacturing a LBC with Gallium Nitride (GaN) technology and/or an improved Universal Excited Upgrade (iUEU) addressing obsolescence with Application-Specific Integrated Circuit (ASIC) functionality prototypes. The LBC w/GaN Tech will implement LBT frequency coverage to include Band 4 frequencies and consolidate to one transmitter. This change will also address obsolescence within LBT and Band 4 transmitters as well as updating technology such as the use of GaN material for semiconductor power devices. This change will not increase the power outputs for the ALQ-99 TJS but rather address Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues and mitigate Band 4 hardware inventory shortages.

The iUEU will address obsolescence with Application-Specific Integrated Circuit (ASIC) functionality, enhance current UEU capabilities and encompass technology upgrades that will bring exciters to be electronically equivalent to Next Generation Jammer and support with common JATO libraries.

For a prototype to be considered successful, the performer must provide a plan that fully describes their capabilities to modernize an LBC w/ GAN Tech and / or iUEU as form, fit and functional replacements. The expectation is that each design will strongly leverage commercial expertise in physical design in GAN technology to achieve the LBC prototype. Each design capability must also be supported through a strong business plan for maintaining the prototype after manufacture. The plan will include:

- Elements of Design Requirements Definition
- Design
- Redesign of Shop Replaceable Assemblies (SRAs)
- Engineering Analysis
- Program and Engineering Reviews
- Manufacture of Engineering Development Models (EDMs)
- Documentation and Program Management

The project duration is expected not to exceed 8 months.

**6. Project Deliverables:**

#	Deliverable(s)	Description	Frequency	Delivery Method
1	Monthly Status Report	Provide summary of events/actions completed during the previous month	1/Monthly	Electronic Submission
2	Modernization Plan	Detailed modernization plan includes elements of design requirements definition, design, SRA's, EDM's, engineering analysis, and Integrated Master Schedule.	Once/upon project completion	Electronic Submission

**7. Current Project Budget: \$240,000.00**

This value is subject to change depending on the number of modernization plans submitted and chosen for funding. Respondents should propose a cost that reflects the respondent's approach and not use the budgetary estimate only. The current project budget value represents what is currently available for a subject project at the time of the RFS release. 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.

**8. Security Classification, Respondent Restrictions, and other required compliances:**

This RFS has been released under Distribution Statement A: Approved for public release

This project encompasses the following restrictions:

a. Security Classification: Respondents will be required to possess at least SECRET level personnel and facilities clearance at the time of award. Respondents should verify this in their proposal.

A Secret Security Annex containing classified frequencies will be provided to those eligible contractor(s) at time of project award. The annex is classified SECRET//NOFORN. Personnel who are handling the classified annex must hold an active SECRET or higher level security clearance.

The Classified Annex will only be provided to the contractor(s) receiving project awards.

b. ITAR Compliance is required at time of award.

c. Respondents are limited to companies based in the United States only. Subcontractors / teaming partners may not include foreign entities.

d. Respondents must be compliant with DODI 8582.01. "Security of Unclassified DoD Information and Non-DoD Information Systems" and DoDM 5200.01 Volume 4, "DoD Information Security Program; Controlled Unclassified Information". Respondents must implement the security requirements in NIST SP 800-171, "Protecting Controlled Unclassified Information in Non-Federal Information Systems and Organizations"

e. Respondents shall complete the Section 889(a)(1)(B) Prohibition on Contracting with Entities Using Certain Telecommunications and Video Surveillance Services or Equipment representation attached to this RFS (Attachment #1), and return the signed representation with the submitted proposal.

f. Any additional restrictions applicable to this project: Information contained in Security Annex will only be provided per ALQ-99 TJS Classification Guide restrictions/distribution requirements.

All work must be done in accordance with the appropriate Security Classification Guides (SCGs). Copies of the SCGs relevant to the threats in the classified annex may be requested via email to [s2marts@nstxl.org](mailto:s2marts@nstxl.org)

## **9. Level of Data Rights Requested by the Government:**

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.

**10. RFS and Response Process:**

a. The following is requested from all respondents:

Proposal Volumes	Page Limitation
Technical Response	20 pages (max)
Price Response	5 pages (max)

For written submissions, the following formatting guidelines shall be followed by respondents:

- 10-point font (or larger) for all response narratives; smaller type may be used in figures and tables but must be clearly legible.
- Single-spaced, single-sided (8.5 by 11 inches).
- Margins on all sides (top, bottom, left, and right) should be at least 1 inch.
- Page limitations shall not be circumvented by including inserted text boxes/pop-ups or internet links to additional information. Such inclusions are not acceptable and will not be considered as part of the response
- Files must be submitted in PDF and/or Microsoft Word formats only. Price volumes may be submitted in an editable, unlocked Excel file

b. Each submittal **must include** (i) a Cover Page, (ii) a Technical Response, and (iii) a Price Response that each align to the instructions below:

i. Cover Page: (Not included within page count) The cover page shall include the company’s name, Commercial and Government Entity (CAGE) Code (if available), level of facility clearance (if available), address, primary point of contact, business size, and status of U.S. ownership.

Respondents shall also identify the applicable 10 U.S.C. § 2371b eligibility criteria related to the response (*please identify only one*):

- There is at least one nontraditional defense contractor (*defined below*) or nonprofit research institution participating to a significant extent in the project; **OR**

- 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.

Note: A *Nontraditional Defense Contractor* is defined as 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 (DOD) for the procurement of transaction, any contract or subcontract for the DOD that is subject to full coverage under the cost accounting standards prescribed pursuant to 41 U.S. Code §1502 and the regulations implementing such section.

ii. Technical Response:

**Responses should be constructed to align with the order of the instructions below (1 - 7).**

1. Solution Narrative: Respondents shall describe the approach used to design/deliver a unique prototype solution for the prototype technology objectives defined in RFS Section 5, Desired End-State Objective(s), to include any attachments. While these focus areas are of significant importance, responses will be considered as a whole. No pricing shall be included in the technical response.

The Solution Narrative must also include a discussion on schedule and the timing of all deliverable(s) to include those outlined within RFS Section 6, Project Deliverables.

2. Explanation Supporting Eligibility for Award of a Prototype OTA:

Respondents shall provide rationale to support the specific condition that permits award of an OTA to the proposed prime contractor/performer. The onus of proof to support *nontraditional participation to a significant extent; small business or nontraditional defense contractor status; or any cost sharing arrangement* lies with the respondent and has a direct correlation to award eligibility.

3. Government Furnished Property or Information: Respondents must clearly identify if its proposed solution depends on Government Furnished Information (GFI) / Government Furnished Property (GFP) or other forms of Government support (i.e. laboratory or facility access), etc.

If so, the response must specify the GFI/GFP required. Respondents must clearly identify if its proposed solution depends on GFI/GFP or other forms of Government support be provided, the impact to the solution if the requested

information/property/asset is not available, and will confirm the details with the respondent prior to any proposal revisions or selection, if applicable.

4. Mandatory Compliance with Restrictions: Respondents must address the restrictions identified within RFS Section 8, Security Classification, Respondent Restrictions, and other Required Compliance, and explain how each regulation or standard is currently, or will be met.
5. Task Description Document (Not Included Within Page Count): Respondents must provide a Task Description Document (TDD) outlining the project tasks to be performed along with schedule milestones and delivery dates required for successful completion. It is anticipated that, if selected, the proposed TDD will be incorporated into the resultant OTA. Respondents are encouraged to be concise but thorough when outlining their work statements. The TDD may be submitted as an appendix or a separate file as part of the proposal.
6. Summary of Subcontractor Participation (if applicable): Respondents must identify all subcontractors involved and their role within the performance of the proposed concept. The information must include the following:
  - a. Subcontractor company name, Commercial and Government Entity (CAGE) Code (if available), level of facility clearance (if available), address, primary point of contact, business size, and status of U.S. ownership.
  - b. If the subcontracted company's involvement is considered significant, rationale supporting the significance must be present within the narrative. The onus of proof to support participation to a significant extent or any cost sharing arrangement lies with the respondent and has a direct correlation to award eligibility.
  - c. If applicable, Foreign Owned, Controlled, or Influenced (FOCI) Mitigation Documentation shall be provided for subcontractors and will not count towards the page count.
7. Data Rights Assertions and Level of Rights Proposed:
  - a. 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.
  - b. If rights are being asserted at a level less than the Government's desired level of allocation (see RFS Section 9, Level of Data Rights Requested by the Government), respondents must provide detail explaining the specific rationale for the assertion. Please also review 9(b)(iii)(3) below for additional requirements related to data rights pricing.

- c. Any items previously developed with federal funding (and used for the proposed solution) should clearly identify all individual components funded by the Government and the recipient of the deliverables.
- d. 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.

iii. Price Response:

The price response shall be submitted as a separate file from the technical response. No pricing details shall be included in the technical response. This project will employ Fixed Price with Payable Milestones pricing structure:

1. 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.
2. In order to support the Government's evaluation of fair and reasonable pricing, the respondent shall delineate the key pricing components, and show clear traceability to the phases and/or milestones of the Technical Response. At a minimum, key pricing components include Labor Total(s), Other Direct Costs/Material Total(s), License prices and Subcontractor price(s). Data should be segregated by each key objective, milestone, and/or phase proposed.
3. Include a brief narrative that explains your pricing structure and maps the proposed prices to the solution's technical approach.
4. Including a Basis of Estimate to support your pricing may substantially expedite evaluation of your response.
5. If limited or restricted rights are being asserted within the response, a table that includes prices for both Government Purpose Rights and Unlimited Rights for any limited or restricted item must be included.
6. Any additional features or capabilities that extend beyond the currently requested core technical objectives shall be separately priced for the Government's consideration. Pending funding availability and need, the Government may fund these advanced features at a later date.

**11. Evaluation Process and Methodology:**

- a. Individual responses will be evaluated with consideration given to:
  - i. Demonstrated expertise and overall technical merit of the response;



- ii. Feasibility of implementation; and
  - iii. Total project risk as it relates to the technical focus areas, price and schedule
- b. 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 as stated in RFS Section 5, Desired End-State Objectives, as well as the ability to fulfill the objectives in this RFS.
  - c. The Government will award this project, via S<sup>2</sup>MARTS (Agreement No. N00164-19-9-0001), to the respondent(s) whose solution is assessed to be the most advantageous to the Government, when price, schedule, technical risks, the 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.
  - d. The proposed project price, schedule, and intellectual property/data rights assertions will be considered as aspects of the entire response when weighing risk and reward. The assessment of risks is subjective and will consider all aspects of the proposed solution. Respondents are responsible for identifying risks within their submissions, as well as providing specific mitigating solutions.
  - e. 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.

**12. Follow-On Activity:**

- a. 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.
- b. 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.
- c. 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.

### **13. Attachments**

1. FY 2019 NDAA Section 889(a)(1)(B) Verification - Representation
2. FY 2019 NDAA Section 889(a)(1)(B) Clause
3. DD 254 - Security Classification

### **14. Important Dates**

- a. Questions related to this RFS shall be submitted no later than 24 February 2021.  
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”.
- b. Proposals submitted in response to this RFS are due no later than Wednesday, March 24, 2021.
- c. 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.
- d. RFS Respondents must be active members of the consortium at the time of proposal submission.

### **15. Additional Project Information**

- e. The Government intends to award one 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.
- f. 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.
- g. The United States Navy, specifically Naval Surface Warfare Center, Crane Division, has release authority on any publications related to this prototype project.

- h. Unsuccessful respondents will be notified, however, debriefings for this project are not required nor planned at this time.
- i. If resource-sharing is proposed in accordance with 10 U.S. Code § 2371b(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.
- j. Certain types of information submitted to the Department 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.
- k. 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>.
- l. 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).