

**Amendment 0002
Special Notice
N00014-17-SN-0006
Future X-Band Radar (FXR) Industry Day**

The purposes of Amendment 0002 to Special Notice N00014-17-SN-0006 are as follows:

1. Revise Paragraph Number 5 entitled, "Significant Dates and Times" to extend the deadline to request Government Furnished Information (GFI);
2. Revise Paragraph Number 10 entitled, "Government Furnished Information" to provide a revised list of GFI (available upon request); and
 - (a) Incorporate Department of Defense Contract Security Classification Specification (DD254) as Attachment Number 1 to Special Notice N00014-17-SN-0006; and
 - (b) Incorporate the future X-Band Radar DRAFT Statement of Work as Attachment Number 2.

1. Paragraph Number 5 entitled, “Significant Dates and Times” is deleted in its entirety and revised to read as follows:

5. SIGNIFICANT DATES AND TIMES

Anticipated Schedule of Events		
Event	Date	Time (EASTERN DAYLIGHT TIME)
Deadline to request Government Furnished Information (GFI)	02 October 2017	2:00 PM EDT
Visit Request Deadline	08 September 2017	1:00PM EDT
FXR Industry Day Check-In	13 September 2017	8:00AM-9:00AM EDT
FXR Industry Day	13 September 2017	9:00AM – 11:30AM EDT

2. Paragraph Number 10 entitled, “Government Furnished Information” is deleted in its entirety and revised to read as follows:

10. GOVERNMENT FURNISHED INFORMATION

Potential offerors can receive the GFI listed below (in accordance with Standard Distribution D and above ITAR restrictions) upon request to Lynn Christian at Lynn.Christian@navy.mil The request on company letterhead shall include company name, company cage code, company classified mailing address, a current DoD contract number along with the government Point of Contact (POC) for that contract and the contact information for your Joint Certification Program POC. The ONR will use this information to verify eligibility to receive Distribution D, export controlled and classified information. Requests for exceptions to the Distribution D DoD contractor requirement may also be submitted to Ms Christian.

- 1) FXR System Requirements Document (classified document)
- 2) Technical Performance Measures List
- 3) FXR Interface Functional Description (IFD)
- 4) **RF Surveillance Research General (RSRG) Security Classification Guide (SCG)**
- 5) **DRAFT Statement of Work**

3. Department of Defense Contract Security Classification Specification (DD254) is hereby incorporated as Attachment Number 1.
4. The DRAFT Future X-Band Statement of Work is hereby incorporated as Attachment Number 2.

**DEPARTMENT OF DEFENSE
CONTRACT SECURITY CLASSIFICATION SPECIFICATION**
*(The requirements of the DoD Industrial Security Manual apply
to all security aspects of this effort.)*

1. CLEARANCE AND SAFEGUARDING	SER:341-17
a. FACILITY CLEARANCE REQUIRED	SECRET
b. LEVEL OF SAFEGUARDING REQUIRED	SECRET

2. THIS SPECIFICATION IS FOR: <i>(X and complete as applicable)</i>		3. THIS SPECIFICATION IS: <i>(X and complete as applicable)</i>	
a. PRIME CONTRACT NUMBER		<input checked="" type="checkbox"/> a. ORIGINAL <i>(Complete date in all cases)</i>	DATE (YYYYMMDD) 20170829
b. SUBCONTRACT NUMBER		b. REVISED <i>(Supersedes all previous specs)</i>	REVISION NO. DATE (YYYYMMDD)
<input checked="" type="checkbox"/> c. SOLICITATION OR OTHER NUMBER N00014-17-SN-0006	DUE DATE (YYYYMMDD)	c. FINAL <i>(Complete Item 5 in all cases)</i>	DATE (YYYYMMDD)

4. IS THIS A FOLLOW-ON CONTRACT? YES NO. If Yes, complete the following:
Classified material received or generated under _____ *(Preceding Contract Number)* is transferred to this follow-on contract.

5. IS THIS A FINAL DD FORM 254? YES NO. If Yes, complete the following:
In response to the contractor's request dated _____, retention of the classified material is authorized for the period of _____

6. CONTRACTOR *(Include Commercial and Government Entity (CAGE) Code)*

a. NAME, ADDRESS, AND ZIP CODE For RFP purposes only	b. CAGE CODE	c. COGNIZANT SECURITY OFFICE <i>(Name, Address, and Zip Code)</i>
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7. SUBCONTRACTOR

a. NAME, ADDRESS, AND ZIP CODE N/A	b. CAGE CODE	c. COGNIZANT SECURITY OFFICE <i>(Name, Address, and Zip Code)</i> N/A
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8. ACTUAL PERFORMANCE

a. LOCATION	b. CAGE CODE	c. COGNIZANT SECURITY OFFICE <i>(Name, Address, and Zip Code)</i> N/A
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9. GENERAL IDENTIFICATION OF THIS PROCUREMENT
Future X-Band Radar (FXR) Risk Reduction

10. CONTRACTOR WILL REQUIRE ACCESS TO:	YES	NO	11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:	YES	NO
a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION		<input checked="" type="checkbox"/>	a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY		<input checked="" type="checkbox"/>
b. RESTRICTED DATA		<input checked="" type="checkbox"/>	b. RECEIVE CLASSIFIED DOCUMENTS ONLY		<input checked="" type="checkbox"/>
c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION		<input checked="" type="checkbox"/>	c. RECEIVE AND GENERATE CLASSIFIED MATERIAL	<input checked="" type="checkbox"/>	
d. FORMERLY RESTRICTED DATA		<input checked="" type="checkbox"/>	d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE		<input checked="" type="checkbox"/>
e. INTELLIGENCE INFORMATION			e. PERFORM SERVICES ONLY		<input checked="" type="checkbox"/>
(1) Sensitive Compartmented Information (SCI)		<input checked="" type="checkbox"/>	f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES		<input checked="" type="checkbox"/>
(2) Non-SCI		<input checked="" type="checkbox"/>	g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER	<input checked="" type="checkbox"/>	
f. SPECIAL ACCESS INFORMATION		<input checked="" type="checkbox"/>	h. REQUIRE A COMSEC ACCOUNT		<input checked="" type="checkbox"/>
g. NATO INFORMATION		<input checked="" type="checkbox"/>	i. HAVE TEMPEST REQUIREMENTS		<input checked="" type="checkbox"/>
h. FOREIGN GOVERNMENT INFORMATION		<input checked="" type="checkbox"/>	j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS		<input checked="" type="checkbox"/>
i. LIMITED DISSEMINATION INFORMATION		<input checked="" type="checkbox"/>	k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE		<input checked="" type="checkbox"/>
j. FOR OFFICIAL USE ONLY INFORMATION	<input checked="" type="checkbox"/>		l. OTHER <i>(Specify)</i>	<input checked="" type="checkbox"/>	
k. OTHER <i>(Specify)</i>		<input checked="" type="checkbox"/>	Item 11.g: Submit requests to official listed in Item 16.a		

12. PUBLIC RELEASE. Any information (classified or unclassified) pertaining to this contract shall not be released for public dissemination except as provided by the Industrial Security Manual or unless it has been approved for public release by appropriate U.S. Government authority. Proposed public releases shall be submitted for approval prior to release Direct Through (Specify)

Office of Naval Research, Dr. Bradley Binder, ONR 312, One Liberty Center, 875 N. Randolph Street. Arlington, VA 22203-1995

to the Directorate for Freedom of Information and Security Review, Office of the Assistant Secretary of Defense (Public Affairs)* for review.
*In the case of non-DoD User Agencies, requests for disclosure shall be submitted to that agency.

13. SECURITY GUIDANCE. The security classification guidance needed for this classified effort is identified below. If any difficulty is encountered in applying this guidance or if any other contributing factor indicates a need for changes in this guidance, the contractor is authorized and encouraged to provide recommended changes; to challenge the guidance or the classification assigned to any information or material furnished or generated under this contract; and to submit any questions for interpretation of this guidance to the official identified below. Pending final decision, the information involved shall be handled and protected at the highest level of classification assigned or recommended. (Fill in as appropriate for the classified effort. Attach, or forward under separate correspondence, any documents/guides/extracts referenced herein. Add additional pages as needed to provide complete guidance.)

** Access to classified information is not required for the purpose of submitting a bid/proposal for this statement of work. However, prior to award of contract the successful contractor will be required to have a Secret facility clearance. Contractor personnel supporting positions that require access to classified information/material shall be U.S. citizens and, at minimum, a Secret personnel clearance.

1. Document preparation and distribution shall be only as prescribed by the Program Officer.
2. Forward copies of any subcontractor DD254's issued incident to this contract to the official shown in item 16.a below.
3. The attached FOUO Information Sheet is hereby made a part of this DD 254.
4. To obtain documentation/information submit requests to official listed in 16.a below.

Program Officer: Dr. Bradley Binder
Office of Naval Research
One Liberty Center
875 N. Randolph Street
Arlington, VA 22203
(703) 696-1438

-This DD254 is for solicitation purposes only; therefore, it must be returned to Torri D. Woodfolk to be updated with a contract number upon contract award before the contract DD254 can be issued to the contractor.

14. ADDITIONAL SECURITY REQUIREMENTS. Requirements, in addition to ISM requirements, are established for this contract. Yes No
(If Yes, identify the pertinent contractual clauses in the contract document itself, or provide an appropriate statement which identifies the additional requirements. Provide a copy of the requirements to the cognizant security office. Use Item 13 if additional space is needed.)

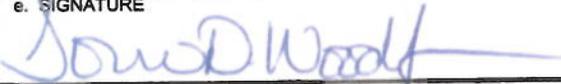
15. INSPECTIONS. Elements of this contract are outside the inspection responsibility of the cognizant security office. Yes No
(If Yes, explain and identify specific areas or elements carved out and the activity responsible for inspections. Use Item 13 if additional space is needed.)

16. CERTIFICATION AND SIGNATURE. Security requirements stated herein are complete and adequate for safeguarding the classified information to be released or generated under this classified effort. All questions shall be referred to the official named below.

a. TYPED NAME OF CERTIFYING OFFICIAL Torri D. Woodfolk [torri.powell@navy.mil]	b. TITLE Contracting officer for Security Matters	c. TELEPHONE (Include Area Code) 703-696-8177
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d. ADDRESS (Include Zip Code)
Office of Naval Research
One Liberty Center, 875 N. Randolph Street
Arlington, VA 22203-1995

e. SIGNATURE



17. REQUIRED DISTRIBUTION

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | a. CONTRACTOR |
| <input type="checkbox"/> | b. SUBCONTRACTOR |
| <input checked="" type="checkbox"/> | c. COGNIZANT SECURITY OFFICE FOR PRIME AND SUBCONTRACTOR |
| <input type="checkbox"/> | d. U.S. ACTIVITY RESPONSIBLE FOR OVERSEAS SECURITY ADMINISTRATION |
| <input type="checkbox"/> | e. ADMINISTRATIVE CONTRACTING OFFICER |
| <input checked="" type="checkbox"/> | f. OTHERS AS NECESSARY ONR 312, 43, 25 |

"FOR OFFICIAL USE ONLY" (FOUO) INFORMATION SHEET"1. General

a. The "For Official Use Only" (FOUO) marking is assigned to information at the time of its creation by a DoD Agency. It is not authorized as a substitute for a security classification marking but is used on official government information that may be withheld from the public under exemptions 2 through 9 of the Freedom of Information Act.

b. Use of the FOUO marking does not mean that the information cannot be released to the public, only that it must be reviewed by the Government prior to its release to determine whether a significant and legitimate government purpose is served by withholding the information or portions of it.

2. Identification Markings

a. An unclassified document containing FOUO information will be marked "For Official Use Only" at the bottom of the front cover (if any), on the first page, on each page containing FOUO information, on the back page, and on the outside of the back cover (if any). No portion markings will be shown.

b. Within a classified document, an individual page that contains both FOUO and classified information will be marked at the top and bottom with the highest security classification of information appearing on the page. If an individual portion contains FOUO information but no classified information, the portion will be marked "FOUO."

c. Any "For Official Use Only" information released to a contractor by a DoD Agency is required to be marked with the following statement prior to transfer:

This document contains information EXEMPT FROM MANDATORY DISCLOSURE under the FOIA. Exemption(s) _____ apply.

d. Removal of the "For Official Use Only" marking can only be accomplished by the originator or other competent authority. When the "For Official Use Only" status is terminated, all known holders will be notified to the extent practical.

3. Dissemination. Contractors may disseminate "For Official Use Only" information to their employees and subcontractors who have a need for the information in connection with a classified contract.

4. Storage. During working hours, "For Official Use Only" information shall be placed in an out-of-sight location if the work area is accessible to persons who do not have a need for the information. During nonworking hours, the information shall be stored to preclude unauthorized access. Filing such material with other unclassified records in unlocked files or desks is adequate when internal building security is provided during nonworking hours. When such internal security control is not exercised, locked buildings or rooms will provide adequate after-hours protection or the material can be stored in locked receptacles such as file cabinets, desks, or bookcases.

5. Transmission. "For Official Use Only" information may be sent via first-class mail or parcel post. Bulky shipments may be sent by fourth-class mail. Whenever practical, electronic transmission of FOUO information (e.g., data, website, or e-mail) shall be by approved secure communications systems or systems utilizing other protective measures such as Public Key Infrastructure (PKI) or transport layer security (e.g., https).

6. Disposition. When no longer needed, FOUO information may be disposed of by tearing each copy into pieces to preclude reconstructing, and placing it in a regular trash container or as directed by the DoD Agency.

7. Unauthorized Disclosure. Unauthorized disclosure of "For Official Use Only" information does not constitute a security violation but the releasing agency should be informed of any unauthorized disclosure. The unauthorized disclosure of FOUO information protected by the Privacy Act may result in criminal sanctions.

Future X-Band Radar (FXR)

Statement of Work (SOW)

1 Background

The Future X-Band Radar (FXR) effort is entering a Technology Advancement and Risk Reduction phase that will mature technologies that the Surface Navy could leverage for its next generation, X-band multi-function radar. FXR will assume the functional capabilities of AN/SPQ-9B including surface search, horizon search, and periscope detection and discrimination. The new radar system will be back-fit on existing ships and forward fit for new ship construction. Although a functional replacement for AN/SPQ-9B, the threats and combat operational environment for this radar are new conditions dictating performance.

Science and Technology development is crucial to properly advance and evaluate industry's ability to deliver the necessary functionality within affordability, performance, size, weight, power, and cooling (SWAP-C) constraints. Technology assessment, risk reduction and industry engagement is needed, from study through prototype efforts, to help mature key technologies and refine the specific performance requirements to enable a successful and timely acquisition phase that meets the notional schedule which is driven by the In-Yard Need Date (IYND) in Fiscal Year (FY) 2027.

2 Introduction

The Office of Naval Research Code 312 in partnership with Program Executive Office Integrated Warfare Systems (PEO IWS) 2.0 is seeking industry participation in a FXR concept study. At a high level, the purpose of this study is to (1) develop baseline FXR system concept(s); (2) estimate and substantiate SWAP-C and effective isotropic radiated power (EIRP) under a flyaway cost constraint; (3) assess current technology and propose new technology development required to achieve capability; (4) assess system performance; and (5) conduct design trade studies and System Level Specification Refinement.

The results of these studies will help the Government inform potential FXR technology investments and assess risk of draft FXR requirements in particular with respect to the combination of SWAP-C, EIRP and acquisition cost.

3 FXR System Scope

FXR will support multiple ship classes for ship self-defense and situational awareness as defined by the draft FXR System Requirements Document (SRD). It is anticipated that other implementations will include integration with other elements in the combat system. The system will be designed with a lower power mode for safe operations in harbors for tactical situational awareness and force protection.

The Government considers X-band as the most suitable operating band for this radar. With limited availability of other maritime radiolocation radio frequency (RF) spectrum, other bands will not be considered.

4 Tasks

The Offeror shall perform the following tasks, which are described in more detail in Sections 5-7 below. It is expected that some of the work in these tasks will be interrelated.

1. Radar system concept development,
2. SWAP-C and EIRP Estimation under a Flyaway cost constraint
3. Proposed Technology Development,
4. Performance assessment,
5. Trade studies and System Level Specification Refinement

5 Radar System Concept Development

The United States Navy is interested in concepts for a low-cost, light-weight, X-band, active phased array radar referred to as FXR. FXR will support surface warfare gun engagement and anti-ship cruise missile defense. In order to extend the radar horizon, the Navy is interested in concepts suitable for installation at heights high above the waterline, near or at the top of ship masts, on current and future surface combatants as well as other platforms currently designated for AN/SPQ-9B. To this end, FXR on-array weight is potentially a focus area for technology development. Array acquisition cost may also drive the need for technology development in particular with respect to high efficiency X-band transmit/receive (T/R) modules, power amplifiers (PAs) and associated packaging.

The Offeror shall develop a concept or concepts to design, develop, and deploy an X-band shipboard radar system that meets the requirements documented in the draft FXR System Requirements Document (SRD) provided as Government Furnished Information (GFI).

Open and Modular Subsystems: The Offeror shall define a modular system architecture that enables future capability growth and technology insertions with minimal impact. Trades shall identify specific candidate software modules and hardware components, and define their corresponding interfaces. The FXR external interface shall also be a standard interface that facilitates integration with additional ships and combat systems.

5.1 SWAP-C, EIRP Estimation and Proposed Technology Development

As part of the FXR baseline system concept and architecture, the offeror shall include all associated estimates and substantiation for SWAP-C, Equivalent Isotropic Radiated Power (EIRP), and production costs. The design concept shall include the following:

1. A description of the system concept and architecture necessary to meet technical requirements supporting the functional and performance requirements in the SRD including EIRP. The concept shall meet the environmental requirements (natural and manmade) of a Navy shipboard radar system as defined in the SRD. The concept shall include features to operate through a 120-day mission without critical failure.

2. SWAP-C estimates and substantiation.
 - a. New ship construction, estimate and substantiation of topside weight, size and location. Substantiation should include the percentage of actual, design, and engineering estimates to support associated weight uncertainty estimates. Concepts may take advantage of opportunities on specific platforms for distribution of weight versus elevation between transmit and receive functionality.
 - b. Cooling: Since cooling capacity of ships is a constraint, the use of improved technologies to reduce the heat load on ship service cooling is a particular focus area. Designs featuring higher efficiency technologies in power amplification, receiver components, advanced cooling, efficient signal processing, and other engineering innovations to control heat load are desired.
 - c. For back-fit in existing ships and installation on other platforms, commonality of antenna/sub-array/subsystems with the forward-fit system is highly valued and desired to the extent practical and shall be included in the design concept.
3. Identification of key radar technologies that enable performance identified in the SRD. The Offeror shall provide a self-assessment of maturity of each key radar technology and path to achieve sufficient maturity for the production system.
4. The desired per unit procurement cost is less than \$30M flyaway costs. The Offeror shall provide a cost analysis of the concept radar system including Non-Recurring Engineering (NRE) and Recurring Engineering (RE) costs. The Offeror shall provide cost estimates for the technology maturation plans developed in item 3 above.
5. A description of the Offeror's industrial capabilities to mature technology, produce and deliver FXR.
6. For the Offeror's radar system concept (item 1 above), utilizing the technology matured as proposed in item 3 in this list, provide a Blake Chart including transmit power, transmit antenna gain, receive antenna gain, all ohmic and non-ohmic losses, and the system noise temperature. For ease of reference, it is preferred that the reference point for antenna gains and noise temperature be the plane directly in front of the antenna aperture. The Blake Chart should characterize the sensitivity of a horizon search processing interval used at the required elevation and for a specified azimuth. The Blake chart sensitivity should be calculate using representative waveforms designed to meet the horizon search requirements for firm track range and clutter suppression. The horizon search waveform must address all applicable requirements in the SRD and any derived requirements to fulfill the horizon search function. This includes processing interval and dwell times within the constraints of the derived search frame time, and resolution of range and Doppler ambiguities. The losses resulting from this ambiguity resolution process, including the effect of blind ranges and blind Doppler frequencies, must be included. Furthermore, a detailed breakdown of all processing losses including antenna beam shape losses, pulse compression weighting, range straddling, Doppler straddling, Doppler weighting, Constant False Alarm Rate (CFAR) loss, beam shape, array scan losses, and jammer residue must be included and substantiated. A Blake Chart is required for this exemplar for each different concept or configuration of a system. Blake charts must account for environmental conditions and jamming identified the SRD.

6 Performance Assessment

The following aspects of radar performance shall be investigated and presented to the Government at a Technical Interchange Meeting (TIM). A Concept Radar System Performance Study Report shall be submitted addressing each enumerated item below:

1. The contractor shall perform a study assessing the performance of the concept radar system. The assessment shall include performance against selected Technical Performance Measures (TPMs) listed in Appendix B to this Statement of Work.
2. The Offeror shall report SWAP-C, EIRP, and receive sensitivity allocations to radar subsystems and associated components.

7 Trade Studies

The Offeror shall execute trade studies that assess Cost & Ship Integration, Size, Weight, Power, and Cooling (SWAP-C) impacts and document those impacts for the following trade studies:

1. Industry Proposed Requirement Changes (FXR SRD Challenge) – Offerors shall provide a red-lined version of the FXR SRD that includes recommendations for refinement and revisions to the Draft FXR SRD including consideration of SWAP-C, EIRP, and acquisition cost. The Offeror shall provide cost impact and schedule risk for compliance with selected requirements and recommendations where relaxation could result in substantial development savings, recurring cost savings, reduction of development schedule, or avoidance of technical risk. The Government will assess the impact of all proposed SRD revisions, and adjudicate all recommendations to ensure operational performance requirements can be met with minimal cost and schedule risk.
2. Cost & Ship Integration – Offerors shall develop trade studies for mounting options that include impact to SWAP-C, assessment of impact to reliability, maintainability and accessibility, and impact to the ship including any piping, cabling and HVAC support transiting the mast. Trade studies shall also include concepts for minimizing below decks equipment footprint.
3. Operating Bandwidth – studies shall address optimization of operating bandwidth to address low-elevation multipath effects while ensuring RF interoperability with other sensors and emitters. Sources of interfering RF to FXR and potential victims of FXR RF will be on ownership and other platforms.

7.1 Additional Trade Studies

If the Government assesses significant margin and acceptable risk with respect to the combination of SWAP-C, EIRP and acquisition cost, then the Government would be interested in learning what additional capabilities the following studies would bring to an FXR concept. However, the execution of these optional studies will depend upon the availability of Government funds. Therefore offerors may propose options and associated period of performance (POP) for the conduct of the following trade studies of particular Government interest. The Government may exercise these options based on the Government assessment of results of Sections 5 and 6 above, and items 1-3 in the list above.

1. Digital Beamforming / Signal Processing
 - a. Trades shall address cost, ship fit, dynamic range, linearity, signal processing and spiral growth in capability. Array and beamforming trades may consider element level and subarray digital beamforming options, partial (e.g., single dimension) or full digital beam forming, and on-array versus off-array digital beamforming.
 - b. Electronic Protection (EP) architecture trades to include considerations of array architecture and signal processing impacts.
 - c. Design trades that would allow for spiral development of signal processing algorithms/modes, including approaches for data collection to support ongoing signal processing algorithm development.
2. Array polarization – Studies shall explore antenna polarization options to address potential FXR mission areas and future growth.
3. Instantaneous Bandwidth – address the bandwidth required to meet accuracies and resolution for all FXR functions including AAW Search and Track, SuW Search and Track, Periscope Detection and Discrimination, Electronic Protection, and Non-Cooperative Target Recognition.
4. Receiver Damage Protection, Receiver Linearity and Instantaneous Dynamic Range
 - a. Trade studies shall address receive linearity, instantaneous dynamic range, and power consumption across architecture (AESAs, partial digital beamforming, element-level digital beamforming) and receive chain technologies.
 - b. Trades studies shall identify receiver chain component configuration options (including amplifiers, filters, and limiters) to address requirements to prevent damage and operate without degradation in presence of other high power emitters.
 - c. Trade Studies shall include assessment of the feasibility to meet these requirements concurrently with derived sensitivity requirements.
5. Spectral Roll Off and Spurious Emissions – studies shall address the feasibility and design impacts of system level requirements to control transmitted frequency spectrum.

8 Deliverables

The following is the list of deliverables for the X-Band effort. The Government reserves the right to reduce the list of deliverables based on available funding.

1. Monthly Technical and Financial Reports;
2. Red-lined version of the GFI System Requirements Document (SRD);
3. A baseline system concept and architecture description with associated estimates and substantiation for industrial capabilities, SWAP-C estimates and substantiation including the percentage of actual, design, and engineering estimates to support associated SWAP-C uncertainty estimates, EIRP estimates and substantiation including scenarios, environmental and system Blake Chart assumptions and estimates, and an analysis of NRE and RE costs;
4. Technology maturation plans and cost estimates;

5. A Concept Radar System Performance Study Report with TPM assessment;
6. System Trade Studies Reports; and
7. Final Report

9 Government Furnished Information (GFI)

The Government intends to distribute the following GFI to Offerors:

- 1) FXR System Requirements Document (classified document)
- 2) Technical Performance Measures List
- 3) FXR Interface Functional Description (IFD)
- 4) RF Surveillance Research General (RSRG) Security Classification Guide (SCG)
- 5) DRAFT Statement of Work

DRAFT