

*Global Position System (GPS) Based Clutter Loss Measurement (BCLM)
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM*



DEFENSE INFORMATION SYSTEMS AGENCY
The IT Combat Support Agency



**Other Transaction Authority (OTA)
Request for White Papers (RWP)**

Project Number	DISA-OTA-20-R-BCLM
RWP Title	Global Position System (GPS) Based Clutter Loss Measurement (BCLM)
Issued by	Defense Information Systems Agency (DISA) Other Transaction (OT) Agreement Team www.DISA.mil
White Papers Due Date/Time (Suspense)	Monday, 17 August 2020 at 2:00PM CDT
Submit White Papers To	disa.scott.ditco.mbx.pl84-other-transaction-authority@mail.mil

Note: Please advise DISA as soon as possible via email to disa.scott.ditco.mbx.pl84-other-transaction-authority@mail.mil if your organization intends to submit a White Paper to DISA in response to this RWP.

*OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM*

The Defense Information Systems Agency (DISA), Emerging Technology (EM) Directorate through the DISA Procurement Services Directorate (PSD) is seeking the development of prototype systems, software, and processes that can be used to operationally measure clutter loss using Global Position System (GPS) signals across multiple satellite constellations.

SECTION 1 OVERVIEW/DESCRIPTION

1.1 PURPOSE

This Request for White Paper (RWP) is being issued to conduct research, development, and testing activities associated with GPS Based Clutter Loss Measurement (BCLM) activities. This request meets the statutory requirements of Other Transaction Authority (OTA) (10 U.S.C. 10 U.S.C. §2371b) for the development of a GPS BCLM prototype.

The Department of Defense (DoD), Military Services and Defense Information Systems Agency (DISA) Defense Spectrum Organization (DSO), each developed transition plans to support the migration of DoD systems leaving the 1755-1780 megahertz (MHz) band and to facilitate increasingly less restrictive spectrum sharing arrangements for early entry of commercial Advanced Wireless Services-3 (AWS-3) systems in support of the new Federal Communications Commission (FCC) and the National Telecommunications Information Administration (NTIA) rule making for AWS-3.

The DISA Transition Plan, which is managed by the DSO, includes six initiatives, one of which is the DISA 5, 1755-1780 MHz Spectrum Sharing Test and Demonstration (SST&D) Program. SST&D includes the authority to investigate improvements related to AWS-3 spectrum sharing between DoD and industry. The primary objectives of the DISA 5 SST&D Program are to:

1. Facilitate Expedited and Expanded Entry (FEEE) of commercial deployments into the 1755-1780 MHz band.
2. Identify, Assess, Test/demonstrate, and Operationalize (IATO) coexistence assessments, interference mitigation, and other spectrum sharing enablers that support increased sharing between Long Term Evolution (LTE) and incumbent DoD systems.

In order to achieve its objectives, the SST&D Program currently focuses on three broad technical areas for improvements in evaluating AWS-3 spectrum sharing, one of which is propagation modeling between early-entry LTE systems and DoD receivers.

Propagation modeling supports early entry of commercial users into the AWS-3 band by analyzing the aggregate interference level to DoD assets. DSO has developed and continues to refine the Early Entry Portal Analysis Capability (EEPAC), which computes the aggregate interference to DoD assets due to LTE User Equipment (UE) emissions in proposed LTE

OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM

network deployments (that operate in the 1755 – 1780 MHz band). An important factor impacting the aggregate interference level at DoD receivers is the clutter loss on the paths between the UEs and the DoD receivers. As a result, considerable effort is being expended to develop and improve “clutter models” that can be used within EEPAC, and other Service-specific aggregate interference tools (AITs) to predict clutter loss.

Under DISA 5, DSO conducted initial market research in the form of an initial study, which was completed in March of 2017. Specifically, the initial study evaluated the feasibility of using GPS signals to measure clutter loss in various environments. However, while the initial study provided valuable information, in order to meet emerging needs of the DoD, the Government needs to take the next step in the form of prototype OTA. The initial study effort clearly shows significant potential to further pursue this technique for characterizing clutter loss for 1755-1780 MHz band systems because of the following:

- Standard GPS receivers can make power measurements down to thresholds near -130 decibels per milliwatt (dBm) with accuracies to tenths of a decibels (dB) and
- Clutter loss measurements from this effort demonstrate the need to obtain GPS signals below this threshold (clutter environment dependent).

This GPS Based Clutter Loss Measurement Prototype effort will transition the effort from a study and take it much further, by developing prototype systems, software, and processes that can be used to operationally measure clutter loss using GPS signals across multiple satellite constellations.

1.2 STATEMENT OF NEED

This prototype OT will be competed amongst vendors that express interest in clutter-loss technology and vendors whose specialty is in spectrum use and its relative technologies. The prototype developed under this effort will be tested, evaluated, and refined for a possible follow-on production.

The results of this prototype project are directly relevant to enhancing the mission effectiveness of military transmitter/receiver systems. An important factor impacting the aggregate interference level at DoD receivers is the clutter loss on the paths between the UEs and the DoD receivers. Identifying clutter loss characteristics prior to DoD’s decision-making timeline ensures that the most informed decisions can be made, maximizing the usage of scarce spectrum resources. Ultimately, the early identification of this information reduces DoD’s costs and risks resulting from the AWS-3 transition.

The AWS-3 program requires the ability to rapidly measure clutter loss at operational locations. Currently, use of GPS to more accurately associate clutter measurements at specific locations, does not exist within DoD, and this OT will develop and provide two prototype instrument devices capable of making the requisite measurements. The value of this clutter loss data will

*OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM*

rapidly diminish over time, as decisions must be made based on anticipated potential interference. Obtaining clutter loss data will enable the DoD to reevaluate its fundamental approach to clutter loss modeling, and it will enable the AWS-3 program to make more sound recommendations as systems transition.

SECTION 2 GENERAL SUBMISSION REQUIREMENTS

2.1 FORMATTING

Vendors are solely responsible for all expenses associated with responding to this RWP. White Papers shall follow the format described below. Evaluation and selection of the White Papers will be completed based on criteria in Sections 3 and 4. Responding to this RWP does not obligate the Government for costs associated with responding to this notice. The Government reserves the right to cancel this requirement if no White Papers satisfy the criteria contained in Section 3.4 and/or no funding becomes available.

Subject to the availability of funds, the DISA/Defense Information Technology Contracting Organization (DITCO) at Scott AFB, IL intends to competitively issue this effort as an OTA Agreement in accordance with 10 U.S.C. 2371b. If an OTA is awarded from this subject request, the Agreement is not considered a procurement contract and therefore not subject to the Federal Acquisition Regulation (FAR).

The following **White Paper** formatting requirements apply:

- Times New Roman 10 (or larger) single-spaced, single-sided, 21.6 x 27.9 cm (8.5 by 11 inches);
- Smaller type may be used in figures and tables, but must be clearly legible;
- Margins on all sides (top, bottom, left, and right) should be at least 2.5 cm (1 inch);
- Page limit is fifteen (15) pages, does not include cover sheet and the *Affirmation of Business Status Certification, Rough Order of Magnitude (ROM) Template, Intellectual Property Statement/Agreements/Disclosures*;
- *Italic Red* text with brackets borders (e.g. [*company name*]) indicated areas for entry of information by the vendor. Delete all italicized text, contained within brackets before submittal of the White Paper;
- 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 to Request for White Papers; and
- **DO NOT SUBMIT ANY CLASSIFIED INFORMATION.**

A White Paper **Cover Sheet** is required for all submission and must include the following:

- OTA Project Number;

*OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM*

- Project Title;
- Company Title/Name of Proposed GPS BCLM prototype;
- Date of Submittal;
- Primary point of contact (POC), including name, address, phone and e-mail contact information;
- Total ROM cost for a **no more than 18 months** period of performance; and
- Disclosure of Information Statement (section 5.2).

2.2 MINIMUM ACCEPTABILITY

The Government will evaluate RWP submissions that are deemed as “complete”. To be considered “complete” submissions must contain at a minimum the following:

- Cover Sheet (section 2.1);
- Signed Intellectual Property Statements / Agreements / Disclosures (section 2.3);
- Signed Affirmation of Business Statement (section 2.4);
- Address all of the Evaluation Criteria Factors (sub-sections 3.4.1– 3.4.7).

If the vendor fails to include/address the minimum acceptability requirements (as defined above and throughout the RWP) the White Paper submission will/may be deemed non-compliant and inadequate for further evaluation.

2.3 INTELLECTUAL PROPERTY STATEMENT/AGREEMENTS/DISCLOSURES

2.3.1 SUBMITTER STATEMENT

Each participant shall complete the submitter statement below. The statement shall be included as an attachment to the White Paper and will not count toward the page limit.

I, *[insert submitter’s full name]*, of *[insert full postal address]*, do hereby declare that the GPS BCLM prototype, that I have submitted, known as *[insert name of prototype]*, is my own original work, or if submitted jointly with others, is the original work of the joint submitters.

I further declare that *[check one]*:

I do not hold and do not intend to hold any patent or patent application with a claim which may cover the GPS BCLM prototype that I have submitted, known as *[insert name of prototype]*;

OR *[check one or both of the following]*:

to the best of my knowledge, the practice of the GPS BCLM prototype that I have submitted, known as *[insert name]*, may be covered by the following U.S. and/or foreign patents: *[describe and enumerate or state “none” if applicable]*;

*OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM*

I do hereby declare that, to the best of my knowledge, the following pending U.S. and/or foreign patent applications may cover the practice of my submitted GPS BCLM prototype *[describe and enumerate or state “none” if applicable]*.

I certify that, to the best of my knowledge, I have fully disclosed all patents and patent applications, which may cover my GPS BCLM prototype.

I do hereby agree to provide the statements required by Section 2.3.2 and 2.3.3, below, for any patent or patent application identified to cover the practice of my GPS BCLM prototype and the right to use such for the purposes of the evaluation process.

Signature (electronic signature is acceptable)	✕ _____
Name	<i>[Insert Name of Representative]</i>
Title	<i>[Insert Title of Representative]</i>
Date	<i>[Insert Date of Signature]</i>

2.3.2 PATENT OWNER(S) STATEMENT

Each participant shall complete the Patent Owner(s) statement below. The statement shall be included as an attachment to the White Paper and will not count toward the page limit.

If there are any patents (or patent applications) identified by the submitter, including those held by the submitter, the following statement must be signed by each and every owner, or each owner’s authorized representative, of each patent and patent application identified.

I, *[insert full name]*, of *[insert full postal address]*, am the owner or authorized representative of the owner *[print full name, if different than the signer]* of the following patent(s) and/or patent application(s): *[enumerate]*, and do hereby commit and agree to grant to any interested party on a worldwide basis, if the GPS BCLM prototype known as *[insert name of prototype]* is selected for the DoD prototype, in consideration of its evaluation and selection, a non-exclusive license for the purpose of implementing GPS BCLM prototype *[check one]*:

without compensation and under reasonable terms and conditions that are demonstrably free of any unfair discrimination,

OR

under reasonable terms and conditions (identified in section 3.4.6 –Proposed Data Rights Assertion) that are demonstrably free of any unfair discrimination.

*OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM*

I further do hereby commit and agree to license such party on the same basis with respect to any other patent application or patent hereafter granted to me, or owned or controlled by me, that is or may be necessary for the purpose of evaluating the proposed GPS BCLM prototype. Any future follow-on Production Contract could/will require re-negotiated terms and conditions.

I further do hereby commit and agree that I will include, in any documents transferring ownership of each patent and patent application, provisions to ensure that the commitments and assurances made by me are binding on the transferee and any future transferee.

I further do hereby commit and agree that these commitments and assurances are intended by me to be binding on successors-in-interest of each patent and patent application, regardless of whether such provisions are included in the relevant transfer documents.

I further do hereby grant to the U.S. Government, during the evaluation process, and during the lifetime of the standard, a nonexclusive, non-transferrable, irrevocable, paid-up worldwide license solely for the purpose of modifying my submitted GPS BCLM's specifications (e.g., to protect against a newly discovered vulnerability) for incorporation into the prototype efforts.

Signature (electronic signature is acceptable)	
Name	<i>[Insert Name of Representative]</i>
Title	<i>[Insert Title of Representative]</i>
Date	<i>[Insert Date of Signature]</i>

2.3.3 REFERENCE OWNER(S) STATEMENT

Each participant shall complete the Reference Statement below. The statement shall be included as an attachment to the White Paper and will not count toward the page limit.

I, *[insert full name]*, *[insert full postal address]*, am the owner or authorized representative of the owner *[insert full name, if different than the signer]* of the submitted GPS BCLM prototype and hereby grant the U.S. Government and any interested party the right to reproduce, prepare derivative works based upon, distribute copies of, and display such implementations for the purposes of the GPS BCLM prototype evaluation process, and if the corresponding GPS BCLM prototype is selected, notwithstanding that the implementations may be copyrighted or copyrightable.

*OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM*

Signature (electronic signature is acceptable)	× _____
Name	<i>[Insert Name of Representative]</i>
Title	<i>[Insert Title of Representative]</i>
Date	<i>[Insert Date of Signature]</i>

2.4 AFFIRMATION OF BUSINESS STATUS CERTIFICATION

Each participant shall complete the certification below. The certification shall be included as an attachment to the White Paper and will not count toward the page limit. Please note that some sections in the certification may be left blank due to the type of business completing this form (e.g. non-traditional contractor).

Please note that in order to be eligible to submit a response to the Request for White Paper (RWP), vendors must meet the requirements outlined in 10 U.S.C Section 2371b(d)(1). Vendors shall explain in their White Paper submission, not to exceed (NTE) 15 pages, how they will meet these statutory requirements. Failure to provide the required explanation may result in your White Paper not being considered for this OTA effort.

Participant Name	<i>[Insert Participant Name]</i>
Proposed <u>North American Industry Classification System (NAICS) Code</u>	<i>[Insert NAICS Code]</i>
Industry Size Standard	<i>[Check one of the following boxes]</i> <input type="checkbox"/> Small <input type="checkbox"/> Large <input type="checkbox"/> Federally Funded Research & Development Center
Data Universal Numbering Systems (DUNS) Number	<i>[Insert DUNS Number]</i>
Commercial & Government Entity (CAGE) Code	<i>[Insert CAGE Code]</i>
Active System for Award Management (SAM) Registration	<i>[Check one of the following boxes and insert date]</i> <input type="checkbox"/> Yes <input type="checkbox"/> No Expiration Date:
Address 1	<i>[Insert Address Number and Street]</i>
Address 2	<i>[Insert suite, office, etc. Number]</i>
City/State/Zip Code	<i>[Insert City, State, Zip Code]</i>

*OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM*

Throughout the evaluation, the Government reserves the right, but is not obligated, to ask questions about individual vendor solutions. However, any response to the RWP that does not fully address all of the requirements will be/can be eliminated from further consideration. This RWP constitutes Phase I of the evaluation, described below.

3.1 ACQUISITION PHASE I – WHITE PAPER EVALUATION

The Government will issue a Request for White Papers (RWP, via direct email to non-traditional vendors that have expressed interest in clutter-loss technology, vendors whose specialty is in spectrum use and its relative technologies and vendors who have participated in the incubation of new technologies to revolutionize the way in which spectrum is utilized. The RWP will request vendors to submit Rough Order of Magnitude (ROM) costs and narratives. The Government will conduct an evaluation of all eligible White Paper(s) submitted in response to this RWP. The White Papers will be evaluated to identify viable solutions to the problem statement. The Program Manager will direct a technical team to evaluate White Paper submissions in accordance with the defined selection process detailed in the RWP. Final selection(s) recommendation(s) will be made by the program management technical lead to the Agreements Officer (AO). After the evaluation of White Paper(s), the Government may select solution(s) that will proceed to the next phase. Any vendor whose solution is not selected, will be provided a letter containing brief explanation for non-selection.

3.2 ACQUISITION PHASE II – ORAL PRESENTATIONS (OPTIONAL)

The Government may elect to proceed to Acquisition Phase III or invite selected vendors to provide an oral presentation, which can be conducted in person, via videoconference, or phone. During the presentation, a vendor should be prepared to discuss in detail its solution and be prepared to answer specific questions the Government may have after a review of the white papers. After the presentation, the Government will evaluate presented vendor's solution and determine whether it will proceed to the next phase. Any vendor whose solution is not selected will be provided a letter with brief explanation for non-selection.

3.3 ACQUISITION PHASE III – REQUEST FOR PROJECT PROPOSAL

The Government will issue a Request for Project Proposals (RFPP) to the selected vendor. After the receipt of the RFPP, the Government will conduct an evaluation to ensure it meets the requirements. The next step will be to invite the vendor to meet with the Government in order to engage in negotiations. The Government will provide an initial model OT Agreement to the selected vendor, which will be the Government’s opening position for negotiations. Using a collaborative process, the Government and vendor will develop a detailed Project Work Statement, negotiate Terms and Conditions, agree on milestones, KPPs and deliverables, and negotiate final price. Once the Government and the selected vendor reach an agreement, the AO will conduct a pre-award review of the prototype OTA Agreement. Upon completion of the review, the AO will award a prototype OTA Agreement to a selected vendor. In the event that the Government is unable to reach an agreement with the initial selectee, the Government may re-evaluate White Paper Responses and make another selection.

3.4 EVALUATION CRITERIA

The overall evaluation will be based on the integrated assessment of the criteria outlined in sub-sections 3.4.1 – 3.4.7.

Vendors are required to meet all of the evaluation requirements, objectives, and representations. Failure to respond to any of the following evaluation factors listed below (sub-sections 3.4.1 – 3.4.7) may result in elimination from the competition. In addition, the Government has included several templates (e.g., tables, etc.) within several of the evaluation factors outlined below, that identify the minimum level of information that must be included with the final submission. If a vendor fails to include the Government provided templates (identified as required), then such failure may result in the vendor’s White Paper submission being deemed non-compliant and inadequate for further evaluation.

3.4.1 TECHNICAL

The Government will evaluate the vendor’s technical merit based on the criteria listed below:

The Government will evaluate the vendor’s technical merit based on the criteria listed below. Solutions will be evaluated based upon the following:

3.4.1.1. Evaluation of the vendor’s approach to meet the requirements outlined in Section 3.4.2, its understanding of the project’s scope and the vendor’s concept to the methodologies used to achieve the results described and its approach to meet the requirements outlined below.

OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM

3.4.1.2. The vendor's White Paper shall articulate, in detail, how it will develop and deliver two (2) functional GPS Clutter Measurement prototype devices (with associated design documentation) that quantify signal changes as a result of clutter. These prototype devices shall at minimum:

- a. Be self-contained.
- b. Be able to be safely driven and carried by personnel.
- c. Be able to be lifted and set-up by a single person.
- d. Be able to be broken-down into a single pack or movable case.
- e. Be able to be powered by a vehicle power source or battery source.
- f. Achieve satisfactory Ingress Protection rating to withstanding elements and environments that may be encountered during measurement campaigns.
- g. Collect local weather information during execution of measurements.
- h. Obtain sufficiently long data samples to establish statistical significance.
- i. Be remotely operated over LTE network.
- j. Collect and record pertinent GPS/GNSS data (e.g., collection of raw data including; look angle, satellite location, signal level) to enable clutter loss analysis
 - i. Capture multiple GPS/GNSS satellites simultaneously
- k. Obtain between six to ten individual satellite signals during a test collection.
- l. Measure signal levels at low elevation angles through as much as much as 40dB of attenuation.
- m. Measure accuracy of GPS receiver at a resolution higher than 1 dB

3.4.1.3. The vendor's White Paper shall provide a software solution for data processing that can be used to process the raw data collected from the prototype devices into meaningful information. The effort shall solicit input from SST&D Propagation Working Groups. The approach shall include:

- a. Developing, refining, and documenting techniques for the processing of raw data.
- b. Delivering any algorithms and data models that support this effort.
- c. Algorithms and data models.
- d. Addressing how angles-of-arrival from receiver/transmitter, weather, and other external events impact clutter.
- e. Delivering all materials associated with the approach.

3.4.1.4. The ability of the vendor's White Paper to illustrate how it will conduct developmental test and evaluation of prototype devices and utilize the prototype devices to conduct sample GPS clutter loss measurements. This effort shall verify that the prototype measurement devices function as expected.

*OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM*

3.4.1.5. The ability of the vendor's White Paper to illustrate how it will conduct preliminary operational tests by verifying functionality against one morphology with the NTIA'S Institute for Telecomm Science (ITS) for validation. Findings shall be delivered to the Government and should include data that has been processed through the Vendor's software solution.

3.4.1.6. The ability of the vendor's White Paper to illustrate how it will develop and refine operational techniques for measurement and provide an initial plan for a future measurement campaign against all morphologies.

3.4.1.7. The ability of the vendor's White Paper to illustrate how it will develop techniques to "calibrate" and test the prototype articles, including instructions on "how to calibrate and test the devices," and a detailed explanation of "what does calibrated mean for these devices?" that will include error predictions.

3.4.1.8. The ability of the vendor's White Paper to illustrate how it will develop a documented, validated, repeatable measurement and analysis technique(s) which could be executed by persons with technical skill levels equivalent to that of peer propagation environment researchers and/or engineering graduate students.

3.4.1.9. The ability of the vendor's White Paper to illustrate how it will conduct a series of studies and subsequent Results Reports that support future implementation of the following:

- a. Conducting a study on how to change the prototype for the follow-on Production OT or FAR-based contract.
- b. Conducting a study that determines how many production devices should be built (following prototype), based on potential future measurement campaigns.
- c. Conducting a study on how to make production devices open architecture to account for multiple satellite constellations.
- d. Conducting a study that identifies other satellite constellations (including future presently unlaunched constellations) that could be used to support measurements in other frequency bands.
- e. Conducting a study that determines how ruggedized these systems should be to support measurement campaigns.
- f. Conducting a study to determine if and how weather impacts clutter analysis.

3.4.1.10 The ability of the vendor's White Paper to illustrate how it will develop and deliver all technical specifications, user manuals, and training materials for the hardware and software prototypes, to include:

- a. Architecture artifacts
- b. Requirements traceability artifacts

*OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM*

- c. System requirements specifications
- d. Hardware and software design documentation
- e. User manuals
- f. Training materials

3.4.2 SECURITY

The Government will evaluate the vendor's security approach based on the criteria listed below:

- a. Vendor's ability to articulate and demonstrate seamlessly incorporate spectrum related security considerations into the above listed objectives.

3.4.3 BUSINESS VIABILITY

Business viability shall be included as an attachment to the White Paper and will not count toward the page limit. Please address whether the company has the technical capability and resources to effectively accomplish the work. The White Paper should also address the following:

Describe your company or organization:

- a. When was it established?
- b. Who are the principals?
- c. What is the main focus of your business?
- d. Who are your firm's primary customers?
- e. What efforts similar in scope or complexity to the GPS BCLM effort have you successfully performed?
- f. What is your annual revenue (sales and costs)?
- g. How many personnel do you employ?
- h. Do you have the personnel and resources necessary to perform this Agreement in house, or do you anticipate subcontracting some of the work? (If you expect to subcontract, in what area[s] do you expect to need third-party support, and why?)
- i. Where will the portion of the work to be accomplished at the Contractor's facilities be performed?

3.4.4 SCHEDULE

The Government will evaluate the vendors proposed schedule/timeline/sprints to include milestones, activities, and deliverables to research, evaluate, test, and deliver two (2) prototype devices and other required deliverables. The multifaceted concept exploration and design approach must demonstrate the Vendor's ability to provide the Government with a viable solution that comprehensively and innovatively addresses the requirements and evaluation criteria set forth in Sections 1.2—Statement of Need, and 3.4 Evaluation Criteria, above.

*OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM*

Table 2 – Schedule

Phase	Milestone	Deliverable	Estimated Delivery (Weeks/Months after Award)
<i>[Insert Phase]</i>	<i>[Insert list of Milestones]</i>	<i>[Insert list of deliverables associated with each milestone (as a minimum the proposed proof of concept and a “Final Report” must be included as deliverables)]</i>	<i>[Insert estimated lead time in terms of weeks or months after award for each milestone/deliverable]</i>

3.4.5 PRICE

The vendor shall submit pricing data utilizing the Government’s supplied Rough Order of Magnitude (ROM) Template (i.e., table 3). Failure to include the information described within this section may result in the vendor’s entire Price/Cost criteria/factor being deemed non-compliant and inadequate for further evaluation review.

In making a selection, the Government will consider affordability in comparison to the Government estimate to determine whether the proposed solution is in the best interest of the Government. The Government provided ROM Template (i.e., table 3) shall be included as an addendum or appendix to the White Paper and will not count toward the page limit. The vendor is responsible for verifying that the totals within table 3 are correctly calculated.

The vendor ROM narrative shall discuss the approach used to estimate the price of accomplishing all requirements. The Vendor shall assume the Government knows nothing about its capabilities or estimating approach.

At a minimum, the ROM narrative shall also include the following cost categories for the ROM:

- **Prime Vendor Labor:** The ROM Narrative shall include the basis for which the estimate labor was calculated. (i.e., Generic position titles and estimated rates and hours for those individuals).
- **Sub-Vendor/Consultant Labor:** Provide a list of sub-vendor/consultant effort required to meet the technical approach as described in the white paper and the estimated cost. Include the basis for which the estimated labor was calculated, (i.e., Generic position titles and estimated fully burdened hourly rates and hours for those individuals).
- **Material/Equipment:** Provide a list of the materials/equipment required to meet the technical approach as described in the White Paper and the estimated cost;
- **ODCs/Travel:** Provide a list of the other direct costs required to meet the technical approach as described in the White Paper and the estimated costs with basis; Identify any

OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM

expenses incurred by an employee while those individuals are traveling for business purposes. (e.g., estimated costs for lodging, transportation, and meals) and identify the basis for how the travel costs were calculated.

Global Position System (GPS) Based Clutter Loss Measurement (BCLM)
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM

Table 1 – ROM Template

Elements	FY2020	FY2021	FY2022	Grand Total
Program/Project Management				
Prime Vendor Labor	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2020-2022]</i>
Sub – Vendor/Consultant Labor	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2020-2022]</i>
Material/Equipment	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2020-2022]</i>
Other Direct Costs (ODCs)/Travel	<i>[Insert Total Cost for ODCs for Fiscal Year 2020]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2021]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2022]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2020-2022]</i>
SUBTOTAL	<i>[Insert Total Cost for Program/Project Management for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Program/Project Management for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Program/Project Management for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Program/Project Management for Fiscal Year 2020-2022]</i>
Concept Exploration				
Prime Vendor Labor	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2020-2022]</i>
Sub – Vendor/Consultant Labor	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2020-2022]</i>

OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM

Material/Equipment	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2020-2022]</i>
Other Direct Costs (ODCs)/Travel	<i>[Insert Total Cost for ODCs for Fiscal Year 2020]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2021]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2022]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2020-2022]</i>
SUBTOTAL	<i>[Insert Total Cost for Concept Exploration for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Concept Exploration for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Concept Exploration for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Concept Exploration for Fiscal Year 2020-2022]</i>
Design Prototype				
Prime Vendor Labor	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2020-2022]</i>
Sub – Vendor/Consultant Labor	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2020-2022]</i>
Material/Equipment	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2020-2022]</i>
Other Direct Costs (ODCs)/Travel	<i>[Insert Total Cost for ODCs for Fiscal Year 2020]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2021]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2022]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2020-2022]</i>
SUBTOTAL	<i>[Insert Total Cost for Design Prototype for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Design Prototype for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Design Prototype for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Design Prototype for Fiscal Year 2020-2022]</i>
Test and Evaluation (T&E)				
Prime Vendor Labor	<i>[Insert Total Cost for Design Prototype for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Design Prototype for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2020-2022]</i>

OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM

Sub – Vendor/Consultant Labor	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2020-2022]</i>
Material/Equipment	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2020-2022]</i>
Other Direct Costs (ODCs)/Travel	<i>[Insert Total Cost for ODCs for Fiscal Year 2020]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2021]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2022]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2020-2022]</i>
SUBTOTAL	<i>[Insert Total Cost for T&E for Fiscal Year 2020]</i>	<i>[Insert Total Cost for T&E for Fiscal Year 2021]</i>	<i>[Insert Total Cost for T&E for Fiscal Year 2022]</i>	<i>[Insert Total Cost for T&E for Fiscal Year 2020-2022]</i>
TOTAL ROM COSTS				
Prime Vendor Labor	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Prime Labor for Fiscal Year 2020-2022]</i>
Sub – Vendor/Consultant Labor	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Sub-Vendor/Consultant Labor for Fiscal Year 2020-2022]</i>
Material/Equipment	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2020]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2021]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2022]</i>	<i>[Insert Total Cost for Material/Equipment for Fiscal Year 2020-2022]</i>
Other Direct Costs (ODCs)/Travel	<i>[Insert Total Cost for ODCs for Fiscal Year 2020]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2021]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2022]</i>	<i>[Insert Total Cost for ODCs for Fiscal Year 2020-2022]</i>
TOTAL	<i>[Insert Total Cost of All Elements for Fiscal Year 2020]</i>	<i>[Insert Total Cost of All Elements for Fiscal Year 2021]</i>	<i>[Insert Total Cost of All Elements for Fiscal Year 2022]</i>	<i>[Insert Total Cost of All Elements for Fiscal Year 2020-2022]</i>

OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM

The Government does not require supporting data to justify the estimated costs (e.g., copies of commercial/market price lists/rates, price history, subcontractor quotes, invoices) with the submission of the White Paper. However, vendors will be required to supply the supporting data upon the Request for Project Proposal, if selected.

*Global Position System (GPS) Based Clutter Loss Measurement (BCLM)
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM*

3.4.6 DATA RIGHTS ASSERTION

State whether there are any data rights issues that the Government should be cognizant of moving forward. Specifically, please identify any intellectual property, patents and inventions involved in the proposed solution and associated restrictions on the Government’s use of that intellectual property, patents and inventions. The following table shall be presented for all assertions.

Table 2 – Data Rights Assertion

Technical Data/Computers Software/ Patent to be Furnished with Restrictions	Basis for Assertion	Asserted Rights Category	Name of Entity Asserting Restrictions
<i>[Identify the technical data/software/patent to be furnished with restriction]</i>	<i>[Indicate whether development was exclusively or partially at private expense. If development was not at private expense, enter the specific reason for asserting that the Government’s right should be restricted]</i>	<i>[Insert asserted rights category (e.g., limited rights (data), restricted rights (software), government purpose rights, SBIR data rights or specifically negotiated license)]</i>	<i>[Insert asserted rights category (e.g., limited rights (data), restricted rights (software), government purpose rights, SBIR data rights or specifically negotiated license)]</i>

3.4.7 PARTICIPANTS

List all participants (i.e. other vendors), including description of contributions and significance of each participant.

Table 3 – Participants

Participant	Business Status (Check one)	Participant Contribution and Significance to Overall Project
<i>[Insert separate row(s) for each additional participant. Delete row(s) as applicable if Participant is the only participant.]</i>	<input type="checkbox"/> <i>Traditional</i> <input type="checkbox"/> <i>Non-Traditional</i>	<i>[Insert detailed, quantifiable description which addresses the following:</i> <ul style="list-style-type: none"> • <i>What is this Participant’s significant contribution?</i> • <i>Why is this Participant’s contribution significant to the overall project?</i> • <i>How is this Participant uniquely qualified to provide this significant contribution?</i>

*OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM*

		<i>(Note: number of years of experience is not deemed a unique qualification.)</i>
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The facility(ies) where the proposed work is to be performed and the equipment or other Participant property which will be utilized for the prototype include: *[Insert a brief description of facility(ies)/equipment proposed for use on the project].*

SECTION 4 AWARD

4.1 SELECTION DECISION

It is the Government's intention to negotiate, select, and fund a Prototype Project at the conclusion of the two or three-phased evaluation approach, described in Section 3, which best meets the evaluation criteria listed in Sub-Section 3.4. The White Paper selection will be conducted in accordance with Government procedures and the evaluation criteria in Sub-Section 3.4. The Government will make a determination whether to:

- Select the White Paper(s), or some portion of the White Paper(s); or,
- Reject the White Paper(s) for further consideration.

The White Paper basis of selection decision will be formally communicated to vendors in writing. Once the selection of the best solution(s) is made, the Government team may proceed to the next phase of the evaluation. At any time during evaluations, the Government may choose to cancel this requirement. In case of cancellation, the Government will not be responsible for any expenses associated with responding to RWP.

4.2 FOLLOW ON PRODUCTION

The Government intends to award one prototype OTA Agreement. Prior to awarding the prototype OTA Agreement, the Government will ensure that it is in compliance with 10 USC §2371b(d)(1). The Government will obtain approval from the appropriate approval authority, based on the dollar threshold projected for the prototype OTA Agreement. This will be done prior to entering into the prototype OTA Agreement with a selected vendor.

Provided that the prototype OTA is successfully completed, the Government may award a follow-on production FAR-based contract or OTA Agreement to the participant in the transaction for the prototype project, without further competition. Prior to this, the Government will ensure that it is in compliance with 10 USC 2371b(f). In addition, the Government will again obtain approval from the appropriate approval authority, based on the dollar threshold projected for the production FAR-based contract or OTA Agreement.

SECTION 5 ADDITIONAL INFORMATION

5.1 DOCUMENTATION CLASSIFICATION

Vendors shall not submit any documentation that is classified as “Confidential,” “Secret,” or “Top Secret” throughout the evaluation process. This includes, but is not limited to submission of White Papers, Project Proposals, Project Work Statements, etc.

5.2 DISCLOSURE OF INFORMATION

White Papers, Project Proposals, PWS, etc. containing data that is not to be disclosed to the public for any purpose or used by the Government except for evaluation purposes shall include the following sentences on the cover page:

“This white paper includes data that shall not be disclosed outside the Government, except to non-Government personnel for evaluation purposes, and shall not be duplicated, used, or disclosed -- in whole or in part -- for any purpose other than to evaluate this submission. If, however, an agreement is issued to this Company as a result of -- or in connection with -- the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent agreed upon by both parties in the resulting agreement. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets *[insert numbers or other identification of sheets]*.”

Non-Government personnel will be used in the evaluation of the White Papers. The non-Government advisor may have access to all aspects of the offeror’s White Paper. By submitting White Paper, your company agrees with the use of a non-government advisor employed with the following company:

Advisor Name: Toni Lane
Company: MITRE

Advisor Name: Justin Raines
Company: MITRE

Advisor Name: Corey McRae
Company: MITRE

5.2.1 DATA SHEET MARKINGS

Marking requirements specify that data be “conspicuously and legibly” marked with a protective legend that identifies the OTA number, contractor’s name and address, and the submittal date,

along with the warning “*Use or disclosure of data contained on this sheet is subject to restriction*” on the title page of any restricted data sheets.

5.3 ANALYTICAL AND LABORATORY STUDIES

It is generally desired that active research and development (R&D) is underway for concepts submitted under this effort. Active R&D includes analytical studies and laboratory studies to physically validate the analytical predictions of separate elements of the technology, as well as software engineering and development. The Government is requesting information on any current or ongoing analytical or laboratory studies related to GPS BCLM solutions. Any information related to ongoing efforts shall be included as an attachment to the White Paper and will not count toward the page limit.

5.4 RECORDS, FILES, AND DOCUMENTATION

All physical records, files, documents, and work papers, provided and/or generated by the Government and/or generated for the Government in performance of this OTA, maintained by the vendor which are to be transferred or released to the Government, shall become and remain Government property and shall be maintained and disposed of as applicable. Nothing in this section alters the rights of the Government or the vendor with respect to patents, data rights, copyrights, or any other intellectual property or proprietary information as set forth in any other part of this RWP (including all clauses that are or shall be included or incorporated by reference into the prototype OTA). The AO may at any time issue a hold notification in writing to the vendor. At such time, the vendor may not dispose of any Government data or Government-related data described in the hold notification until such time as the vendor is notified in writing by the AO, and shall preserve all such data IAW Agency instructions. The vendor shall provide the AO within ten (10) business days of receipt of any requests from a third party for Government-related data. When the Government is using a vendor’s GPS BCLM solutions, the vendor shall provide the Agency with access and the ability to search, retrieve, and produce Government data in a standard commercial format.

5.5 SECURITY CLEARANCES

The vendor is responsible for providing personnel with appropriate security clearances to ensure compliance with Government security regulations. The vendor shall fully cooperate on all security checks and investigations by furnishing requested information to verify the vendor employee's eligibility for any required clearance.

The vendors proposed solution (e.g., data, integration with supporting DoD Infrastructure, architecture) will determine the personnel security clearance requirements for the prototype effort. The Government will provided additional details regarding the required security clearances in the RFPP.

5.6 DATA STORAGE

To protect against seizure and improper use by non-United States (U.S.) persons and government entities, all data stored and processed by/for the DoD must reside in a facility under the exclusive legal jurisdiction of the U.S. The vendor will be required to maintain all government data that is not physically located on DoD premises within the 50 States, the District of Columbia, and outlying areas of the U.S., unless otherwise authorized by the responsible Government, as described in DoDI 8510.01 and the DoD Cloud Computing Security Requirements Guide.

If the Government data is co-located with the non-Government data, the vendor shall isolate the Government data into an environment where it may be reviewed, scanned, or forensically evaluated in a secure space with access limited to authorized Government personnel identified by the Agreements Officer, and without the vendor's involvement. The vendor shall record all physical access to the cloud storage facilities and all logical access to the Government data. This may include the entrant's name, role, purpose, account identification, entry and exit time. Such records shall be provided to the Agreements Officer or designee in accordance with the agreement or upon request to comply with federal authorities.

5.7 LAW ENFORCEMENT

The vendor shall acknowledge and affirm that United States (U.S.) Federal law enforcement officials do not need a warrant or a subpoena to access Government data on any system or media employed by the vendor or their sub-vendors or other partners, or allies, to deliver or otherwise support the contracted service for the U.S. Government, subject to requirements for access to classified information and release thereof, if applicable. As specified by the AO, the vendor shall provide immediate access to all Government data and Government-related data impacting Government data for review, scan, or conduct of a forensic evaluation and physical access to any contractor facility with Government data.

5.8 NOTIFICATION

The vendor shall notify the Government Security Contacts (Disa.meade.bd.mbx.sd-security-managers@mail.mil), and the AO within 60 minutes of any warrants, seizures, or subpoenas it receives, including those from another Federal Agency that could result in the loss or unauthorized disclosure of any Government data. The vendor shall cooperate with the Government to take all measures to protect Government data from any loss or unauthorized disclosure that might reasonably result from the execution of any such warrant, seizure, subpoena, or similar legal process.

*OTA Title
Request for White Papers
Project Number: DISA-OTA-20-R-BCLM*

5.9 VENDOR INCURRED EVALUATION COSTS

The costs associated with participating in Phases I through III, to include White Paper(s) preparation and submission, are not considered an allowable charge and should not be included within the ROM or any pricing information.

5.10 EXPORT CONTROLS

Research findings and technology developments arising from the resulting White Paper 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 recipient will comply strictly with the International Traffic in Arms Regulation (22 CFR 120-130), the National Industrial Security Program Operating Manual (DoD 5220.22-M) and the Department of Commerce Export Regulation (15 CFR 730-774).

SECTION 6 RESPONSES

Questions should be addressed to disa.scott.ditco.mbx.pl84-other-transaction-authority@mail.mil, Agreements Officer Yolanda R. Dixon at yolanda.r.dixon2.civ@mail.mil and Agreements Specialist Craig J. Carlton at craig.j.carlton.civ@mail.mil. Please provide any questions, in writing, no later than 11:00 a.m. Central Standard Time (CDT) on Monday, 03 August 2020. The Government reserves the right to not answer questions submitted after this time. Any submissions that are received after the close of the solicitation period will receive no further consideration.

The response shall be due no later than 2:00 p.m. CDT on Monday, 17 August 2020. The responses shall be emailed to disa.scott.ditco.mbx.pl84-other-transaction-authority@mail.mil, Agreements Officer Yolanda R. Dixon at yolanda.r.dixon2.civ@mail.mil and Agreements Specialist Craig J. Carlton at craig.j.carlton.civ@mail.mil.