Broad Agency Announcement: FA2391-23-S-2403

Pioneering Aerospace Capabilities, Engineering and Research (PACER)

CALL Name: Combat Refueling and Operations Networked Universal System (CRONUS) Automated Air-to-Air Refueling (A3R)

20 March 2024

OVERVIEW INFORMATION

Broad Agency Announcement Type: This is a Two-Step Call against the PACER BAA FA2391-23-S-2403. The First Step is a Call for White Papers only. Offerors should monitor SAM.gov for any additional notices or modifications to this Call announcement.

NAICS Code: The NAICS Code for this acquisition is 541715 (Research and Technology in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology) (with Aircraft, Aircraft Engine, and Engine Parts exception), and the small business size standard is 1,500 employees.

Federal Agency Name: Air Force Research Laboratory, Aerospace Systems Directorate, AFRL/RQ

Moratorium on White Papers: Beginning from the date of publication of this Call and continuing until six months after the due date for Proposals, no White Papers submitted during the PACER BAA Open Period covering the topic specified in this Call, "RQT Topic 6 – Control Systems" will be reviewed.

DUE DATE AND TIME:

First Step: WHITE PAPER DUE DATE AND TIME: **06 MAY 2024, 3:00 P.M**. local time, Wright-Patterson AFB, OH. Only White Papers are due at this time.

NOTE: White Paper receipt after the due date and time shall be governed by the provisions of FAR 52.215-1(c)(3). Early proposal submission is encouraged.

Second Step: PROPOSAL DUE DATE AND TIME: To be provided in the Request for Proposal (RFP) sent to offerors that submit White Papers considered to meet the needs of the Air Force. Only White Papers are due at this time.

Submission: White Papers must be submitted to the Primary Contracting Point of Contacts (POCs): Megan Rosenbeck, Contracting Officer, AFRL/RQKPD, megan.rosenbeck@us.af.mil; Ryan Huffman, Contract Specialist, AFRL/RQKPD, ryan.huffman@us.af.mil. Additional Contacts are Kevin Mauersberg, Program Manager; kevin.mauersberg@us.af.mil and Peter Seiley, Section Chief; peter.seiley@us.af.mil. ***Electronic submission is required.*** White Papers can be submitted by email to ryan.huffman@us.af.mil or offerors may request a DoD Safe Drop-

Off link by email to ryan.huffman@us.af.mil at least 4 calendar days prior to White Paper due date.

Type of Contract/Instrument: The Air Force reserves the right to award the instrument best suited to the nature of research proposed. Accordingly, the Government may award any appropriate contract type under the FAR or Other Transaction (OT) for Prototype, grant, cooperative agreement, or OT for Research. The Air Force may also consider award of an appropriate technology transfer mechanism if applicable. **It is anticipated that awards under this Call will be "C" type contracts with Cost Plus Fixed Fee (CPFF) and/or Cost Share (at the discretion of the offeror) CLINs anticipated.** Cost reimbursement contracts require successful offerors to have an accounting system considered adequate for tracking costs applicable to the contract.

Estimated Total Program Cost: The estimated total program cost is $30,407,000.00. This amount is estimated to cover all awards made under this Call and is not the amount estimated to be awarded per contract award.

Anticipated Number of Awards: The Air Force anticipates one or more awards for this Call. However, the Air Force reserves the right to award zero, one, or more contracts for all, some or none of the solicited efforts based on the offeror's ability to perform desired work and funding fluctuations.

Brief Program Summary:

The Combat Refueling & Operations Networked Universal System (CRONUS) program is a technology insertion into the Next Generation Air-refueling System (NGAS) Program of Record (PoR)'s Technology Maturity and Risk Reduction (TMRR) phase. NGAS is an operational concept which enables "fueling the fight" – delivering fuel to airborne assets where and when needed to support the joint force to include contested areas. To project combat power, an airborne platform, whether it be a counter-air, strike, or Intelligence, Surveillance, and Reconnaissance (ISR) platform, must be able to operate within contested or highly contested operational environments. The NGAS concept fuels the fight forward into contested areas enabled by a network of smaller, affordable, crewed and uncrewed NGAS platforms that require a combination of real-time dynamic Air Refueling Battle Management (ARBM) and Automated Air-to-Air Refueling (A3R). The objective of the SOO will focus on platform agnostic A3R technology advancement and demonstration of two major risk areas Relative Navigation and Boom Automation.

Technology development and risk reduction effort consisting of two lines of effort:

1. Develop and demonstrate a relative navigation sending system enabling an uncrewed received to maneuver from rendezvous to refueling position.
2. Develop and Demonstrate fully automated boom technology to execute refueling.

<u>Offerors will select Statement of Objective (SOO) Topics CRONUS RelNav Systems Tasks 3.1 - 3.5 and CRONUS Boom Automation Tasks 4.1 - 4.4 in part or in entirety.</u>

Topic List:

- SOO Topic 3.1 RelNav Capability Assessment
- SOO Topic 3.2 RelNav Integrated Conceptual Design Process
- SOO Topic 3.3 RelNav Innovative Conceptual Design Demonstration & Validation
- SOO Topic 3.4 RelNav Proof of Concept Demonstration
- SOO Topic 3.5 RelNav Program Management & Technical Reporting

- SOO Topic 4.1 Boom Automation Capability Assessment
- SOO Topic 4.2 Boom Automation Integrated Conceptual Design Process
- SOO Topic 4.3 Boom Automation Innovative Conceptual Design Demonstration & Validation
- SOO Topic 4.4 Boom Automation Proof of Concept Demonstration
- SOO Topic 4.5 Boom Automation Program Management & Technical Reporting

Communication Between Prospective Offerors and Government Representatives: All communication prior to and after the White Paper deadline shall be directed to the Contracting POCs listed below.

Contracting POCs:

Megan Rosenbeck
Contracting Officer
AFRL/RQKPD
E-mail address: megan.rosenbeck@us.af.mil

Ryan Huffman
Contract Specialist
AFRL/RQKPD
E-mail address: ryan.huffman@us.af.mil

FULL TEXT ANNOUNCEMENT

I. Program Description: Air Force Research Laboratory, AFRL/RQH, is soliciting White Papers on the following research effort: ***Automated Air-to-Air Refueling (A3R)***

1. **Statement of Objectives:**
   See Attachment 1 for the Statement of Objectives (SOO). This effort falls within the PACER BAA (FA2391-23-S-2403),
   Technical Objective Area Topic 6 – Control Systems: Autonomous control technologies to make autonomous aerospace systems the preferred option for any joint mission. These technologies include, but are not limited to, autonomous collaboration and manned-unmanned teaming; autonomous safety systems; mission autonomy and intelligence; and autonomy test and evaluation.

2. **Within Scope Modification:** Potential offerors are advised that due to the inherent uncertainty of research and development efforts, awards resulting from this announcement may be modified during performance to make within scope changes, to include but not limited to, modifications which increase overall contract ceiling amount and modifications under authority of DFARS 235.006-71.

3. **Deliverable Items:**
   a. Data Items:
   Contract Data Requirements List (CDRL):

CDRL	Deliverable	Frequency
A001	S&T Reports (Final Report)	End of PoP
A002	Funds & Man-hour Expenditure Report	Monthly
A003	Contractor Spend and Expenditure Plan	Monthly
A004	Contract Funds Status Report	Quarterly
A005	Status Report	Monthly
A006	Presentation Material	As Required
A007	Technical Information Report, SF 424 Annual Update	Annually
A008	Computer software product: source code	As Generated
A009	Test Plan	As Required
A010	System/Subsystem Design Description	As Generated
A011	Technical Data Package	As Generated
A012	Scientific and Technical Reports, Interim Report	As Required
A013	Digital Imaging	As Generated
A014	Operations Security (OPSEC) Plan	As Required

A015	Conceptual Design Drawings and Associated Lists	As Required
A016	Developmental Design Drawings and Associated Lists	As Required
A017	Systems Engineering Management Plan	As Required
A018	System Architecture Model	As Required
A019	Acquisition and Sustainment Data Package (ASDP) Technical Report	As Required
A020	Model Based Systems Engineering (MBSE) Development Plan (MDP)	As Generated
A021	Model-Based Engineering Failure Modes, Effects, and Criticality Analysis Profile (SYSML Version)	2 Times

See Attachment 2 for the Contract Data Requirements List.

b. **Hardware:** Relative navigation sensing and communication hardware expected.
c. **Software:** Relative navigation system software expected.

4. **Schedule: (Total POP is 36 months for both RelNav and Boom)**
   - Overall CRONUS RelNav System Tasks 3.0 – 3.5 PoP:
     - Overall PoP: 36 months
     - Technical Period of Performance: 33 months
     - Reporting: 3 months

   - Overall CRONUS Boom Automation Tasks 4.0 – 4.5 PoP:
     - Overall PoP: 36 months
     - Technical Period of Performance: 33 months
     - Reporting: 3 months

5. **Other Requirements:**
   a. Program Security Classification: Secret

   b. OPSEC: Operations Security (OPSEC) requirements, per the PACER BAA, FA2391-23-S-2403, I. (page 9), will be incorporated into the Statements of Work.

   c. Export Control: Information involved in this research effort is subject to Export Control (International Traffic in Arms Regulation (ITAR) 22 CFR 120-131, or Export Administration Regulations (EAR) 15 CFR 710-774). A Certified DD Form 2345, Military Critical Technical Data Agreement, is required to be submitted with the First Step – White Paper.

   d. Export-Controlled Items: As prescribed by DFARS 225.7901-4, DFARS 252.225-7048, "Export-Controlled Items (JUN 2013)" shall be contained in ALL resulting contracts.

e. Contractor Performance Assessment Reporting System (CPARS): Not Applicable.

f. Science and Technology (S&T) Protection: In accordance with Air Force Research Laboratory Instruction (AFRLI) 61-113, *"Science and Technology (S&T) Protection for the Air Force Research Laboratory"*, offerors are required to submit the following as part of their Proposal (Second-Step):

1) A completed initial Standard Form (SF) 424, *Research and Related Senior/Key Person Profile (Expanded) Form*, (PACER BAA Attachment 9) for all Senior/Key Personnel proposed in support of the AFRLI 61-113 Personnel Risk Assessment requirement.

2) Documentation of a Security Program Plan in support of the AFRLI 61-113 Initial Institution S&T Protection Program Review requirement. This must include, at a minimum, a completed Security Program Questionnaire (PACER BAA Attachment 10). Submittal may also include a pre-existing plan that the offeror uses as a matter of course or plan developed specifically for this acquisition. The purpose of requesting the plan is to assess the offeror's capacity for protection of the Government's S&T. Failure to demonstrate a plan adequate to meet the needs of the requirements, as determined by the Government in its sole discretion, may be grounds for considering the proposal un-awardable.

<u>Government Procedures</u>
The Government will review the submitted S&T protection documentation only for those proposals categorized as Selectable and selected for funding and negotiations.

S&T Protection Initial Risk Review:

- Personnel Risk Assessment: The Government will review non-government research key/senior performers identified by the offeror on the initial SF 424 for workload conflicts and conflicts of interest.
- Initial Institution S&T Protection Program Review: The Government will review the offeror's security program information submitted in accordance with paragraph 2 of this section (above) to identify any potential risks and ensure appropriate measures are in place to protect S&T information.

The Government may require the offeror to submit additional information and/or a mitigation plan for any identified S&T protection risks. If the Government determines the offeror failed to provide adequate additional information; or an acceptable mitigation plan; or it is determined the offeror's S&T protection approach is high risk and does not provide adequate protection of S&T information, the Government may reject the proposal and withdraw it from consideration for award.

S&T Protection Annual Risk Review: In accordance with PACER BAA Attachment 8 (SOW Supplemental Requirements), the Contractor shall provide an SF 424 with the following information: 1) an initial report of all Senior/Key Personnel at the time of award; 2) an annual report of all Senior/Key Personnel providing support; 3) a report for any new Senior/Key Personnel who join the contract, agreement, grant, or OT. Any updated SF 424s for new Senior/Key Personnel supporting the award require coordination from the Government prior to the contractor employee receiving access to S&T information. The purpose of this report is oversight and should not be construed as relieving the contractor/recipient of any S&T Protection requirements within the contract, grant, agreement, or OT.

g. The following provisions/clauses are applicable to this effort:

- FAR 52.204-27 Prohibition on a ByteDance Covered Application (Full Text)
- DFARS 252.204-7008 Compliance with Safeguarding Covered Defense Information Controls (Full Text)
- DFARS 252.204-7012 Safeguarding Covered Defense Information and Cyber Incident Reporting (Full Text)
- DFARS 252.204-7018 Prohibition of the Acquisition of Covered Defense Telecommunications Equipment or Services (Full Text)
- DFARS 252.204-7019 NIST SP 800-171 DoD Assessment Requirements – Please be aware the offeror is required to implement NIST SP 800-171 pursuant to DFARS Clause 252.204-7012 (Full Text)
- DFARS 252.204-7020 NIST SP 800-171 DoD Assessment Requirements
- DFARS 252.215-7009 Proposal Adequacy Checklist
- DFARS 252.228-7001 Ground and Flight Risk (Full Text)
- H0023 Air Force Research Laboratory – Wright Research Site Security Requirements (JUN 2023) (Full Text)

6. Other Information:

a. Government Furnished Property (GFP), Government Furnished Information (GFI) and/or Software, or Contractor Acquired Property:

GFI will be provided and is required to submit a successful proposal. Offerors that anticipate submitting a proposal must submit an email request to Ryan Huffman at ryan.huffman@us.af.mil **and** Megan Rosenbeck at megan.rosenbeck@us.af.mil, Additional Contacts are Kevin Mauersberg, Program Manager; kevin.mauersberg@us.af.mil and Peter Seiley, Section Chief; peter.seiley@us.af.mil. containing the name of the contractor, Points of Contact (POC), cage code and request for the GFI package. Distribution of the GFI will be disseminated by request only once a valid Military Critical Technical Data Agreement DD2345 is submitted and verified and the offeror has been vetted by AFRL/RQOS. If approved the documents will be distributed to the offeror via DoD SAFE.

b. Base Support/Network Access: Base Support is not required.

c. Data Rights:
   1) Technical Data: Unlimited
   2) Non-Commercial Software (NCS): Unlimited
   3) NCS Documentation: Unlimited
   4) Commercial Computer Software Rights: Customary License

   Unlimited rights is desired. Other than unlimited rights, must be identified in the White Paper in accordance with PACER BAA and as required by DFARS 252.227-7017, Identification and Assertion of Restrictions on the Government's Use, Release, or Disclosure of Technical Data or Computer Software. See PACER BAA I.6.c.

d. This announcement incorporates Federal Acquisition Regulation (FAR) and supplement provisions and clauses by reference. The full text provisions can be found at acquisition.gov.

II. Award Information

1. Anticipated Award Date: Anticipated contract award date could be as early as 30 September 2024.

2. Anticipated Funding: A contract type with Cost Plus Fixed Fee and/or Cost Share CLINs are anticipated.
   The budget for the program, subject to availability, is anticipated to be as follows: Total estimated program value is approximately $30.4M with multiple awards ranging from $5M -$10M. This anticipated budget is an estimate only, and the Government reserves the right to award contracts with values higher or lower than the stated estimates.

III. Eligibility Information: See PACER BAA FA2391-23-S-2403

IV. White Paper/Proposal Submission Information

Overview: This Call is a Two-Step Call. For a Two-Step Call, White Papers will be solicited, and subsequent RFPs may follow after White Paper Reviews.

1. FIRST STEP - White Paper Instructions

a. General: The FIRST STEP requests a White Paper and a rough order of magnitude (ROM) cost. The White Paper shall include a discussion of the nature and scope of the research and the offeror's proposed technical approach. The Government will review the White Papers in accordance with the FIRST STEP White Paper Review Criteria, set forth in Section IV.3.a. below. Based on this review, the Government will determine whether the White Paper has the potential to best meet the Air Force's needs. Those offerors submitting White Papers assessed as meeting Air Force needs will be asked to submit a Technical and Business/Cost proposal. An offeror submitting a Proposal without first submitting a White Paper **will not** be eligible for an award. The cost of preparing White Papers in response to this Solicitation is not

considered an allowable direct charge to any resulting or any other contract; however, it may be an allowable expense to the normal bid and proposal indirect cost as specified in FAR 31.205-18.

Electronic submission is required. White Papers can be submitted by email to ryan.huffman@us.af.mil or offerors may request a DoD Safe Drop-Off link by email to ryan.huffman@us.af.mil at least 4 calendar days prior to White Paper due date.

b. Page Limitation: The White Paper shall be limited to **5 pages** if responding to Section 3 or Section 4 individually**.** If responding to both Sections 3 and 4, the White Paper shall be limited to **10 pages** (5 separate pages for section 3, 5-9 – RelNav System and 5 separate pages for section 4-9 – Boom Automation). White Papers shall be prepared and submitted in Word format. Font shall be standard 10-point business font Arial. Character spacing must be "normal," not condensed in any manner. Pages shall be double-spaced (must use standard double-space function in Microsoft Word), 8.5 by 11 inches, with at least one-inch margins on both sides, top and bottom. All text, including text in tables and charts, must adhere to all font size and line spacing requirements listed herein. Font and line spacing requirements **do not** have to be followed for illustrations, flowcharts, drawings, diagrams, cover page, table of contents, and restrictive/proprietary markings (in header or footer). These exceptions shall not be used to circumvent formatting requirements and page count limitations by including lengthy narratives in such items. Pages shall be numbered starting with the cover page being **Page 1**, and the last page being no greater than **Page 5** if responding to Sections 3 or 4 individually. If responding to both Sections 3 and 4, pages shall be numbered starting with the cover page being **Page 1**, and the last page being no greater than **Page 10**. The page limitation covers all information including indices, photographs, foldouts (counted as 1 page for each 8.5 by 11 portion) tables, charts, appendices, attachments, resumes, etc. The Government will not consider pages in excess of these limitations.

c. Format: The white paper will be formatted as follows:
   1) Section A: BAA Number, Title of Program, Topic Number, Name of Company, Business Size, Company's Commercial and Government Entity (CAGE) number, Dun & Bradstreet (D&B) Data Universal Numbering System (DUNS) number, Unique Entity Identifier (UEI) number, Contracting POC and Technical POCs with appropriate telephone numbers, and email addresses for the POCs. For submissions that will result in classified work, add the following information: Classified level at which company is cleared, contractor address for forwarding classified material (name, address, zip code), cognizant security office (name, address, zip code), and offeror's security officer's name and telephone number).
   2) Section B: Period of Performance and Task Objectives;
   3) Section C: Technical Summary and Proposed Deliverables; and
   4) Section D: Cost of Task (Rough Order of Magnitude (ROM))
   5) Section E: A Certified DD Form 2345, Military Critical Technical Data Agreement. This does not count towards page count limitations.

d. Technical Portion: The technical portion of the White Paper shall include a discussion of the nature and scope of the research and the offeror's proposed technical approach/solution. It may also include any proposed deliverables. Resumes, descriptions of facilities and equipment, and a proposed Statement of Work are not required at this point.

e. Cost Portion: The cost portion of the White Paper shall include a ROM cost estimate. No detailed price or cost support information should be included; only a time-phased bottom line figure should be provided.

f. Other Information: If the offeror wishes to restrict its White Papers, they must be marked with the restrictive language stated in FAR 52.215-1(e).

g. White Paper Content Summary: You may be ineligible for award if all requirements of this solicitation are not met on the due date.

2. **SECOND STEP - Proposal Instructions**

a. **General Instructions:**

1) The SECOND STEP consists of offerors submitting Technical and Cost/Business Proposals within 30 calendar days of an RFP. After receipt, Proposals will be evaluated in accordance with the award criteria in Section IV.3.b. below. Proposals will be categorized and subsequently selected for negotiations.

2) Offerors should apply the restrictive notice prescribed in FAR 52.215-1(e) Instructions to Offerors—Competitive Acquisition. Offerors should consider proposal instructions contained in the Broad Agency Announcement (BAA) Guide for Industry, which can be accessed on line at https://www.afrl.af.mil/Portals/90/Documents/HQ/BAA%20Ind%20Guide%202020.pdf?ver=7AivkWvoUoptKgypgCuIvw%3d%3d. This guide is specifically designed to assist the offeror in understanding the BAA proposal process.

3) Technical/Management and Cost/Business volumes should be submitted in separate volumes and must be valid for at least 180 days. Offerors must state this on the cover page of each volume of their proposal.

4) Proposals must reference the announcement number FA2391-23-S-2403, Call Name, and the relevant Topic Number.

5) Offerors must submit one electronic copy of their Proposals per the directions in the Request for Proposal. Please contact the Contracting POC identified in the RFP if there are any issues submitting an electronic copy.

a. The cost file(s) spreadsheets must be in Microsoft Excel and include the formulas for calculating cost element bases (i.e., G&A, O/H, etc.)

6) Offerors are advised that only Contracting Officers are legally authorized to contractually bind or otherwise commit the Government.

7) The cost of preparing Proposals in response to this BAA is not considered an allowable direct charge to any resulting or any other contract; however, it may be an allowable expense to the normal bid and proposal indirect cost as specified in FAR 31.205-18.

8) **No classified technical proposals or cost volumes are expected. Offerors are encouraged to keep all elements of the proposal package unclassified.** In the rare case where an offeror has a need to submit a classified appendix, please contact the Technical POC identified in the RFP for delivery instructions.

b. **Technical/Management Proposal:**

1) Page Limitations: The following describes proposal page limitations:

a. The Technical/Management Proposal shall be limited to TBD (page count will be provided in the RFP). Technical/Management proposals and Statements of Work must be provided in Microsoft Word. Signed pages may be submitted in Adobe.

b. Font shall be standard 10-point business font Arial.

c. Character spacing must be "normal," not condensed in any manner.

d. Pages shall be double-spaced (must use standard double-space function in Microsoft Word), double sided (each side counts as one page), 8.5 by 11 inches, with at least one-inch margins on both sides, top and bottom.

e. All text, including text in tables and charts, must adhere to all font size and line spacing requirements listed herein. Font and line spacing requirements **do not** have to be followed for illustrations, flowcharts, drawings, diagrams, cover page, table of contents, and restrictive/proprietary markings (in header or footer). These exceptions shall not be used to circumvent formatting requirements and page count limitations by including lengthy narratives in such items.

f. Pages shall be numbered starting with the cover page being Page 1, and the last page being no greater than TBD (page count will be provided in the RFP). The page limitation covers all information including indices, photographs, foldouts (counted as 1 page for each 8.5 by 11 portion) tables, charts, appendices, attachments, resumes, etc.

g. The proposal page limit does not include the offeror's proposed Statement of Work (SOW); however, the same formatting rules apply to the SOW, which is limited to **10** pages.

h. **Please Note: The Government will check the Proposal and SOW for conformance to the stated requirements. Any pages in excess of the stated page limitation after the format check will not be considered for review purposes.**

2) The Technical/Management proposal(s) shall include a discussion of the nature and scope of the research and the technical approach. Additional information on prior work in this area, descriptions of available equipment, use of base support (if requested), data and facilities and resumes of personnel who will be participating in this effort should also be included as attachments to the technical proposal. These volumes shall include a SOW detailing the technical tasks proposed to be accomplished under the proposed effort and suitable for contract incorporation. ***Do not include any proprietary information in the SOW.*** Refer to the BAA Guide for Industry referenced above to assist in SOW preparation. In addition to the contractor proposed SOW, a Government generated Supplemental SOW containing additional contracting requirements will be included in any resulting contracts (See PACER BAA Attachment 8).

3) Any questions concerning the technical proposal or SOW preparation shall be referred to the Technical POCs listed in the RFP.

c. **Cost/Business Proposal:**

1) Separate the Proposal into a business section and cost section. If adequate price competition does not exist, and the threshold for a negotiated contract is equal to or expected to exceed $2,000,000.00, submission of certified cost or pricing data may be required.

a. See PACER BAA Attachment 2 for the Model Contract. Note that the document awarded may include contract line items (CLINs)/clauses/articles in addition to those in the model, and/or some of the CLIN/clauses/articles in the model may be deleted, depending on the specific circumstances of the individual award. Any additions or deletions will be negotiated with the offeror prior to award.

b. The business section should contain all business aspects to the proposed contract, such as type of contract, any exceptions to terms and conditions of the announcement including the model contract, any information not technically related, etc. Provide rationale for exceptions.

c. Associate Contractor Agreements: Associate Contractor Agreements (ACAs) are agreements between contractors working on Government contracts that require them to share information, data, technical knowledge, expertise, or resources. The contracting officer may require ACAs when contractors working on separate Government contracts must cooperate, share resources or otherwise jointly participate in working on contracts or

projects. Prime contractor to subcontractor relationships do not constitute ACAs. For each award, the contracting officer will identify associate contractors with whom agreements are required.

d. Identify any technical data that will be delivered with less than unlimited rights.

e. Subcontracting Plans: For efforts to exceed $750,000, Subcontracting Plans shall be submitted in the cost/business proposal. Reference FAR 19.704 and DFARS 219.704 for subcontracting plan requirements. Small business concerns are exempt from this requirement. If an IDIQ contract arrangement is anticipated, the basis for the subcontracting plan should reflect the entire ceiling amount.

f. Limitations on Pass-Through Charges: As prescribed in FAR 15.408(n)(1) & 15.408(n)(2), provisions 52.215-22, "Limitations on Pass Through Charges- Identification of Subcontract Effort (Oct 2009)," apply.

g. Completed Certifications and Representations (Section K) are due with the Proposal. Certifications and Representations (Section K) can be found in PACER BAA Attachment 3. Offerors may also be required to submit updated or supplemental Certifications and Representations based on the specifics of their proposal.

h. If an offeror proposes the use of GFP, the offer must specifically identify each piece of GFP in the Cost/Business Proposal and propose and substantiate a rental cost for evaluation purposes in accordance with FAR 45.202. Include the following information in the proposal:

    i. A list describing all Government property that the offeror or its subcontractors propose to use on a rent-free basis. The list shall identify the accountable contract under which the property is held and the authorization for its use (from the contracting officer having cognizance of the property);
    ii. The dates during which the property will be used and, for any property that will be used concurrently in performing two or more contracts, the amounts of the respective uses in sufficient detail to support prorating the rent;
    iii. The amount of rent that would otherwise be charged in accordance with FAR 52.245-9, Use and Charges; and
    iv. The voluntary consensus standard or industry leading practices and standards to be used in the management of Government property, or existing property management plans, methods, practices, or procedures for accounting for property.

2) **Cost Element Breakdown:** Clear, concise, and accurate cost proposals reflect the offeror's financial plan for accomplishing the effort contained in the technical proposal. As a part of its cost proposal, the offeror shall submit the information outlined below, together with supporting breakdowns. All direct costs (labor, material, travel, computer, etc.) as well as labor and overhead rates should be provided by contractor fiscal year (CFY). Detailed cost element breakdowns by Government Fiscal Year or calendar year are not required. The supporting schedules may include summary level estimating rationale used to generate the proposed costs. The cost element breakdown should include the following if applicable.

***All cost information must be clear and traceable specific to each task being proposed. AFRL can choose to award all, some, none or combination therof. Each task cost needs to be specific to the SOO task (3.1, 3.2 etc.)**

a. **Direct Labor**: Direct labor should be detailed by number of labor hours by category of labor.

b. **Labor and Overhead Rates**: Direct labor hours, with their applicable rates, must be broken out and the bases used clearly identified. The source of labor and overhead rates and all pricing factors should be identified. For instance, if a Forward Pricing Rate Agreement (FPRA) is in existence, that should be noted, along with the Administrative Contracting Officer's (ACO's) name and telephone number. If the rates are based on current experience in your organization, provide the historical base used and clearly identify all escalation, by year, applied to derive the proposed rates. If computer usage is determined by a rate, identify the basis used and rationale used to derive the rate.

c. **Material/Equipment**: List all material/equipment items by type and kind with associated costs and advise if the costs are based on vendor quotes, data and/or engineering estimates; provide copies of vendor quotes and/or catalog pricing data.

d. **Subcontractor Costs**: Submit all subcontractor proposals and analyses with your cost proposal (See FAR 15.404-3(b)). If the subcontractor will not submit cost and pricing information to the offeror, this information must be submitted directly to the Government for analysis. On all subcontracts and interdivisional transfers, provide the method of selection used to determine the subcontractor and the proposed contract type of each subcontract. An explanation shall be provided if the offeror proposes a different amount than that quoted by the subcontractor. The offeror's proposal must:

    i. Identify principal items/services to be subcontracted.

ii. Identify prospective subcontractors and the basis on which they were selected. If non-competitive, provide selected source justification.
iii. Identify the type of contractual business arrangement contemplated for the subcontract and provide rationale.
iv. Identify the basis for the subcontract costs (e.g., firm quote or engineering estimate, etc.).
v. Identify the cost or pricing data submitted by the subcontractor.
vi. Provide an analysis of the proposed subcontract in accordance with FAR 15.404-3(b). Provide an analysis concerning the reasonableness, realism and completeness of each subcontractor's proposal. If the analysis is based on comparison with prior prices, identify the basis on which the prior prices were determined to be reasonable. The analysis should include, but not be limited to, an analysis of: materials, labor, travel, other direct costs and proposed profit or fee rates.

e. **Special Tooling or Test Equipment:** When special tooling, and/or test equipment is proposed, attach a brief description of items and indicate if they are solely for the performance of this particular contract or project and if they are or are not already available in the offeror's existing facilities. Indicate quantities, unit prices, whether items are to be purchased or fabricated, whether items are of a severable nature and the basis of the price. These items may be included under Direct Material in the summary format.

f. **Consultants**: When consultants are proposed to be used in the performance of the contract, indicate the specific project or area in which such services are to be used. Identify each consultant, number of hours or days to be used and the consultant's rate per hour or day. State the basis of said rate and give your analysis of the acceptability of the consultant's rate.

g. **Travel**: Travel costs must be justified and related to the needs of the project. Identify the number of trips, the destination and purpose. Travel costs should be broken out by trip with number of travelers, airfare, per diem, lodging, etc.

h. **Computer Use**: Detail the amount and kind of computer usage, the cost, and how the costs were derived.

i. **Facilities Capital Cost of Money**: If Facilities Capital Cost of Money is proposed, a properly executed DD Form 1861 is required.

j. **Project Funding Profile**: Offerors should include a project funding profile by Government Fiscal Year (GFY) (1 Oct through 30 Sept) for budgetary purposes. This will enable the Government to easily identify program funding needs by GFY.

k. If an offeror takes exceptions to the requirements called out in the announcement (e.g., base support, GFP, CDRLs), the exceptions should be clearly stated in the cost proposal.

l. **Forward Pricing Rate Agreements**: Offerors who have forward pricing rate agreements (FPRA's) and forward pricing rate recommendations (FPRR's) should submit them with their proposal.

m. Cost/Business proposals have no page/formatting limitations.

3) **Proposal Content Summary**: You may be ineligible for award if all requirements of this solicitation are not met on the proposal due date.

3. **White Paper/ Proposal Review Information**

a. **<u>FIRST STEP</u> - White Paper Peer or Scientific Review Criteria**: Those offerors submitting White Papers as assessed as meeting Air Force needs will be asked to submit a Proposal (Second Step). Offerors not selected to proceed will be notified of the disposition of their White Paper. The Government will review White Papers to determine which of them have the potential to best meet the Air Force's needs based on the following criteria, which are listed in **descending** order of importance:

1) Unique and innovative approach proposed to accomplish the technical objectives. New and creative solutions and/or advances in knowledge, understanding, technology, and the state of the art.

2) The offeror's understanding of the scope of the technical effort.

3) Soundness of the offeror's technical approach.

4) Affordability (Proposed ROM Cost Estimate).

b. **<u>SECOND STEP</u> - Proposal Peer or Scientific Review Criteria**: Proposals will be reviewed through a Peer or Scientific Review process.

The following are the standard Proposal Peer or Scientific Review Criteria. The technical aspect, which is ranked as the first order of priority, shall be reviewed based on the following criteria that are of **descending** order of importance:

(1) **Technical:**

(a) Unique and innovative approach proposed to accomplish the technical objectives. New and creative solutions and/or advances in knowledge, understanding, technology, and the state of the art.

(b) The offeror's understanding of the scope of the technical effort.

(c) Soundness of the offeror's technical approach including whether the proposal identifies major technical risks, clearly defines feasible mitigation efforts, and demonstrates related experience and qualifications of technical personnel.

(d) The potential to transition the research and development deliverables to future Government needs. Any proposed restriction on technical data or computer software will be considered.

(2) **Cost/Price:** The cost evaluation includes the realism of the proposed cost. Cost/Price is a substantial factor, but ranked as the second order of priority. (If an offeror proposes the use of GFP other than any GFP identified in this BAA, and that proposed GFP provides the offeror an unfair competitive advantage, then FAR 45.202 requires rental equivalent be applied to the Cost Factor for evaluation purposes only).

c. **<u>SECOND STEP</u> – Proposal Review and Selection Process**

1) **Categories:** Based on the Peer or Scientific Review, Proposals will be categorized as Selectable, or Not Selectable (see definitions below). The selection of one or more sources for award will be based on the Peer or Scientific Review, as well as importance to agency programs and funding availability.

(a) **Selectable:** Proposals are recommended for acceptance if sufficient funding is available.

(b) **Not Selectable:** Even if sufficient funding existed, the proposal should not be funded.

Note: The Government reserves the right to award some, all, or none of the proposals. When the Government elects to award only a part of a proposal, the selected part may be categorized as Selectable, though the proposal as a whole may not merit such a categorization.

2) No other evaluation criteria will be used.

3) Prior to award of a potentially successful offer, the Contracting Officer will make a determination regarding price reasonableness.

4) As indicated in Section I.5.f. above, the Government will conduct a S&T Protection Initial Risk Review only for those Proposals categorized as Selectable and selected for funding and negotiations.

5) Additional terms, conditions, and instructions applicable to the Second Step – Proposal will be sent with the RFP.

6) **Section K**: A completed Section K will be required to be completed with the Proposal requested in the Second Step.

7) **Model Contract**: The BAA contains a model contract as an example only. Applicable Clauses, terms, and conditions may vary per contractor and per proposal and will be addressed during potential negotiations.

4. Award Administration Information

1) **Award Notices:** Offerors will be notified whether their Proposal is recommended for award by e-mail. The notification is not to be construed to mean the award of a contract is assured, as availability of funds and if necessary, successful negotiations are prerequisites to any award.

V. Other Information

1. **BAA terms, conditions, and instructions:** All BAA terms, conditions, and instructions contained in BAA FA2391-23-S-2403 shall be considered applicable to this Call and First Step - White Papers/Second Step - Proposals shall be in accordance with the BAA, unless deviations are authorized in this call.

2. **Availability of Funds:** Funds are not presently available for this contract. The Government's obligation under this contract is contingent upon the availability of appropriated funds from which payment for contract purposes can be made. No legal liability on the part of the Government for any payment may arise until funds are made available to the Contracting Officer for this contract and until the Contractor receives notice of such availability, to be confirmed in writing by the Contracting Officer.

3. **White Paper/ Proposal Reminders:** You may be ineligible for award if all requirements of this solicitation are not met.
   a. White Papers are due no later than the due date and time specified in the Call.
   b. If selected to provide a Proposal, Proposals are due no later than the due date and time specified in the RFP.
   c. White Paper and Proposal Page limits are strictly enforced.
   d. White Papers and Proposals must be submitted in the format specified.
   e. White Papers are due to the Contracting POCs identified in the Call.
   f. Offerors other than small businesses must include a subcontracting plan.

<u>Attachments:</u>
1. Statement of Objectives (SOO) dated 14 March 2024
2. Contract Data Requirements List (CDRLs)

Combat Refueling & Operations Networked Universal System (CRONUS)

STATEMENT OF OBJECTIVES

Aerial Refueling Systems Automation

14 March 2024

BACKGROUND:

In the 2000s and early 2010s, Department of Defense (DoD) refueling automation efforts focused on crewed tankers and uncrewed receivers. Programs included AFRL Automated Aerial Refueling (AAR)[1], NAVAIR Unmanned Combat Air Systems[2], and DARPA Autonomous Aerial Refueling Demonstration[3]. DARPA extended this work to examine a fully uncrewed concept in its Autonomous High-altitude Refueling program [4] using NASA Global Hawks as both the tanker and receiver.

Relative Navigation (RelNav) was the key development in these efforts. The receiver needed to track the tanker within a relatively short range, approximately 1 nautical mile, to complete the rejoin and maneuver around the tanker. For boom/receptacle refueling, the receiver followed defined routes around the tanker and held at specific positions. For probe/drogue refueling, the receiver had an additional task to identify and track the refueling drogue and blend that tracking task into its navigation mission.

In the late 2010s, the direction of refueling automation R&D changed. The Navy began the MQ-25 Stingray program [5] to develop an uncrewed probe/drogue tanker. Concurrently, the strategic tanker industry conducted independent research and development projects based on their crewed tankers to incorporate aids to the aerial refueling operator (ARO). While these automation systems change some ARO tasks from active participation to monitoring, they do not replace the ARO role on the tanker.

USAF is introducing new vehicles whose refueling automation needs are TBD. AMC is working the KC-135 Recapitalization and Next Generation Air-refueling System (NGAS) programs. ACC is developing the Next Generation Air Dominator (NGAD) family of systems to include Collaborative Combat Aircraft (CCA). NGAS is CRONUS' primary technology transition partner.

CRONUS' refueling systems automation research takes two paths, Boom Automation and RelNav. There may be some crossover between these paths, but the PACER project execution is expected to happen in parallel.

Operating Constraints

- The AFRL AAR development was built on a differential INS/GPS RelNav system for a crewed KC-135 and uncrewed UAS. The concern exists that Global Navigation Satellite Services (GNSS) modes, such as GPS, may not operate as intended in a contested environment. CRONUS RelNav should not be GNSS-dependent.
- The preference is that crewed & uncrewed refueling CONOPS will be similar. AFRL's AAR CONOPs [6] were based on crewed refueling CONOPs. [7] NATO initiated its uncrewed refueling CONOPs development in ATP-3.3.4.10. [8] Offerors may need to make additional operating assumptions. Industry partial boom automation is intended to be transparent to the receiver.

- Datalinks will be required for at least one purpose, command and control. First, the tanker must give clearances and commands to the receivers, and the receivers must acknowledge those clearances and commands. Second, there are some RelNav architectures, such as AAR, that employ RelNav components on both tanker and receivers with the tanker needing to share its state and sensor information with the receivers. Initial analysis may need to use a generic datalink model – bandwidth, latency, frame rate – or assume waveforms.
- Safety and airworthiness requirements will likely require RelNav resiliency, e.g. more than one sensor modality for relative pose, suitable navigation filtering, reliable datalinks or minimal use of datalinks, etc.
- Active sensors and datalinks for refueling operations are required to have Low-Probability-of-Detection (LPD) / Low-Probability-of-Intercept (LPI) characteristics rather than the simple on or off states as described in official emissions control (EMCON) definitions.
- The cost of the RelNav architecture needs to be considered. Some mission sensors may be able to be used for RelNav. The ability to add RelNav-specific sensors to both existing and future platforms impacts the complexity of the sensor and datalink solution.

1.0 OBJECTIVE

The Combat Refueling & Operations Networked Universal System (CRONUS) program is a technology insertion into the Next Generation Air-refueling System (NGAS) Program of Record (PoR)'s Technology Maturity and Risk Reduction (TMRR) phase. NGAS is an operational concept which enables "fueling the fight" – delivering fuel to airborne assets where and when needed to support the joint force to include contested areas. To project combat power, an airborne platform, whether it be a counter-air, strike, or Intelligence, Surveillance, and Reconnaissance (ISR) platform, must be able to operate within contested operational environments. The NGAS concept fuels the fight forward into contested areas enabled by a family of platforms that require a combination of real-time dynamic Air Refueling Battle Management (ARBM) and Automated Air-to-Air Refueling (A3R). The objective of the SOO will focus on A3R technology advancement and demonstration of two major risk areas, Relative Navigation and Boom Automation.

2.0 APPLICABLE DOCUMENTS

2.1 Aerial Refueling CONOPS, crewed, ATP-3.3.4.2

2.2 Aerial Refueling CONOPS, uncrewed, ATP-3.3.4.10

2.3 AFRL-RB-WP-TR-2012-0068: Automated Aerial Refueling (AAR) Phase II Integrator System/Segment Specification Guide Volume 1: AAR System

2.4 AFLCMC Future Tanker MBSE style Guide

The below tasks are to be completed and priced separately (per task). Offeror must respond to sections 3 or 4 and paragraphs 5-9. An offeror may submit separate whitepapers if it wants to address both RelNav System (sections 3, 5-9) and Boom Automation (Sections 4-9).

3.0 CRONUS RelNav System Tasks

The RelNav System effort focuses on guiding an uncrewed receiver from the refueling rendezvous to various positions about the tanker and from position to position about the tanker. ATP-3.3.4.10 represents the community's initial effort to describe the CONOPS. Offerors will need to develop and demonstrate a system that generates navigation outputs, e.g. relative pose and rates. The RelNav System's navigation outputs will be the inputs to a future uncrewed-receiver control system and will need to be similar to the AFRL AAR RelNav System outputs.

RelNav System performance specifications are currently in revision. The revision is expected to be completed in preparation for the PACER Step 2 call. The AAR System/Segment Specification Guide includes AFRL's latest RelNav specifications.

The historical AFRL AAR development effort used an INS/GPS based RelNav System with a low latency datalink to transmit tanker data to the receiver for processing. For the CRONUS project, external navigation sources like GNSS may not be consistently available or reliable. For the purposes of this project, they should not be considered in the design. RelNav System components may be on the tanker, receiver, or both. Any emissions from the system should be Low Probability of Intercept/Low Probability of Detection (LPI/LPD).

3.1 RelNav Capability Assessment:
The contractor shall deliver an operational capability assessment of an unmanned receiver and develop and demonstrate a RelNav sensing system that enables the receiver to maneuver from an aerial refueling tanker rendezvous to standard refueling positions in a GNSS-denied environment. The contractor shall provide documentation of the proposed innovative architectures and technologies that summarizes the new concept capability, key technologies, rapid capability development schedule, cost implications, and risk assessment to justify further development. The government is interested in RelNav concepts that can be developed and demonstrated in less than three years and the associated architectures and technologies to support this objective. (CDRLs A001, A005, A006, A011, A012, A013, A015, A019)

3.2 RelNav Integrated Conceptual Design Process:
The contractor shall identify and integrate relevant digital engineering methods to shorten the conceptual RelNav design. This may involve the improved integration of design processes and contractor teams using Model Based System Engineering (MBSE) and Multidisciplinary Design Analysis and Optimization (MDAO). Section 9.0 Digital System Engineering outlines additional details on potential digital engineering tasks and deliverables that may be scoped to the appropriate level of effort. (CDRLs (A001, A005, A006, A011, A012, A013, A015, A019)

3.3 Innovative Conceptual Design Demonstration & Validation:
The contractor shall apply the digital engineering conceptual design process from Section 3.2 to discover RelNav functions/features that increase performance. The contractor shall demonstrate the RelNav design and assess time savings of applying digital engineering-based processes from Section 3.2 that meet the proposed Required Navigation Performance specifications. The contractor shall include a system performance demonstration plan in the technical data package. The contractor shall deliver the conceptual design, models, and data generated in this effort to support future government activities (CDRLs A001, A005, A006, A011, A012, A013, A015, A019)

3.4 Proof of Concept Demonstration:
The contractor will conduct feasibility testing of RelNav system identified in Section 3.1 in laboratory demonstration of the offeror's RelNav System and a crewed open loop flight demonstration that shows that the offeror's system performance against a truth system and evaluates the performance against the RNP specification. The contractor shall design, fabricate, and conduct testing to verify performance and integration of RelNav system performance at TRL 6 & MRL 6. The contractor shall participate in AFRL test safety processes. (CDRLs A001, A005, A006, A009, A011, A012, A013, A016, A019)

3.5 Program Management & Technical Reporting:
Track technical, schedule, and cost performance; provide status reports; perform customer coordination; conduct a kickoff meeting, provide monthly progress updates, milestone/annual technical reviews; create detailed research plans and review annually; and conduct customer reviews. Quarterly technical and cost-reporting status reports will be submitted. Compile interim and final reports summarizing the effort and results. (CDRLs A001, A002, A003, A004, A005, A006, A012, A013, A017, A018)

4.0 CRONUS Boom Automation Tasks

The CRONUS program is interested in demonstrating refueling automation technologies that would enable a future uncrewed tanker. Current automation solutions require an aerial refueling operator to monitor the system. Boom automation developments have primarily focused on a short-range relative navigation system that provides tracking information into the tanker's boom control unit.

The intent for CRONUS boom automation is to develop full boom automation technologies that would enable a future boom/receptacle (B/R) tanker to be uncrewed. Work areas could include defining models and logic to determine when refueling should proceed and when it should be stopped, extending system reliability so that operator monitoring is not required, analysis techniques to support system certification, and contingency event identification and resolution.

4.1 Boom Automation Capability Assessment:
The contractor shall deliver an operational capability assessment of technologies that would fully automate boom operations enabling a future B/R tanker to be uncrewed. The contractor shall provide documentation of the proposed innovative architectures, logic, and technologies to minimize operator in-the-loop or on-the-loop. Summarize the new concept capability, key technologies, rapid capability development schedule, cost implications, and risk assessment to justify further development. The government is interested in boom automation concepts that can be developed and demonstrated in less than three years and the associated architectures and technologies to support this objective. The assessment shall include a description of what boom automation capabilities are not feasible to develop in this time frame as well as which capabilities are not feasible to demonstrate in this time frame. (A001, A005, A006, A011, A012, A013, A015, A19)

4.2 Boom Automation Integrated Conceptual Design Process:
The contractor shall identify and integrate relevant digital engineering methods to shorten the conceptual boom automation design. This may involve the improved integration of design processes and contractor teams using Model Based System Engineering (MBSE) and Multidisciplinary Design Analysis

and Optimization (MDAO). Section 9.0 Digital System Engineering outlines additional details on potential digital engineering tasks and deliverables that may be scoped to the appropriate level of effort. (CDRLs (A001, A005, A006, A011, A012, A013, A015, A019)

4.3 Innovative Conceptual Design Demonstration & Validation:
The contractor shall apply the digital engineering conceptual design process from Section 4.2 to discover boom automation functions/features that increase performance. The contractor shall demonstrate the boom automation design and assess time savings of applying digital engineering-based processes from Section 4.2. The contractor shall include a demonstration plan in the technical data package. The contractor shall deliver the conceptual design, models, and data generated in this effort to support future government activities (CDRLs A001, A005, A006, A011, A012, A013, A015, A019)

4.4 Proof of Concept Demonstration:
The contractor will conduct feasibility testing of boom automation system identified in 4.1 in laboratory demonstration of the offeror's boom automation. The contractor may be offered a flight test opportunity in which AFRL will facilitate flight test range and aerial refueling receiver access. Cooperative Research And Development Agreements (CRADAs) would need to be executed. Boom automation developers would need to equip and operate their tankers for the boom automation demonstrations. Boom automation contractors, AFRL, and other AF organizations will need to work together to generate flight demonstration approval documentation. Design, fabricate, and conduct testing to verify performance / integration of boom automation system performance is greatly desired to be TRL 6 & MRL 6. (CDRLs A001, A005, A006, A009, A011, A012, A013, A016, A019)

4.5 Program Management & Technical Reporting:
Track technical, schedule, and cost performance; provide status reports; perform customer coordination; conduct a kickoff meeting, provide monthly progress updates, milestone/annual technical reviews; create detailed research plans and review annually; and conduct customer reviews. Quarterly technical and cost-reporting status reports will be submitted. Compile interim and final reports summarizing the effort and results. (CDRLs A001, A002, A003, A004, A005, A006, A012, A013, A017, A018, A021)

5.0 RELIABILITY, MAINTAINABILITY & SUPPORTABILITY (RM&S):
The contractor shall consider RM&S during the execution of this program. Some reliability issues are addressed in the AFRL AAR Systems/subsystem specification. RM&S considerations shall be based on engineering judgment, experience, and available data. No separate reliability testing program is expected to be conducted as part of this program. However, RM&S data shall be documented, and shortcomings reported for consideration during future developments. Supportability considerations should be addressed at levels consistent with Advanced Development (6.3) activities. The contractor shall document the findings. (CDRLs A001)

6.0 SYSTEM SAFETY:
As applicable, the contractor shall identify and document any flight critical and safety critical hazards introduced as part of the design, fabrication, and testing. The design goal shall be to minimize all

hazards. Any residual hazards and subsequent design risk shall be summarized and provide enough detail to support an informed program management decision about the design's overall safety risk. The contractor shall address the identified hazards and recommend mitigations or corrective actions. (CDRL A012)

7.0 OPERATIONS SECURITY (OPSEC):

7.1 Purpose:
OPSEC must be an integral part of our daily activities. As we maintain security on our future technologies that are vital to national interest, we must recognize and prepare for the threat poised against our technology. Department of Defense policies mandate a high degree of security throughout the acquisition process. However, heightened security awareness and threat-based countermeasures are particularly essential during the research and development phase when our technology is most vulnerable to espionage, sabotage, or exploitation. It is the obligation of each employee or persons involved on this contract to be constantly aware of and strictly adhere to security requirements designed to protect sensitive unclassified and other information and resources produced by acquisition, research and development, and technological security efforts outlined in this SOO. The contractor shall ensure employees received training and follow appropriate OPSEC measures during the performance of this contract. (CDRL A014)

7.2 Coordination and Update:
The contractor shall develop an OPSEC plan to protect classified and unclassified sensitive data from exploitation. The contractor shall be responsible to coordinate on all OPSEC requirements and the OPSEC plan. The contractor shall also update the OPSEC plan when updated critical or other information is received including, as appropriate, at the sub-task level. The OPSEC plan shall apply to the contract. In addition, the contractor shall submit an updated SF 424 annually, or when new senior/key personnel are added. (CDRL A007, A014)

7.3 Compliance:
The contractor shall comply with the approved OPSEC plan. OPSEC surveys to measure the effectiveness of the OPSEC program may be conducted by the government. The contractor shall comply with these surveys. The contractor shall train personnel in, and follow appropriate OPSEC measures during, the performance of this contract. (CDRL A014)

8.0 PROGRAM & FINANCIAL MANAGEMENT:
The contractor shall exercise administration and management functions during this effort such as: scheduling of activities and milestones; describing status; outlining contractor activity and progress toward accomplishment of objectives; planning, forecasting, and making recommendations on funding and funding changes; program planning; and describing in detail the conduct and overall results of this effort. The contractor shall ensure the documentation of this program by timely digital / photographic coverage of significant events and milestones. The contractor shall conduct annual reviews of this effort. (CDRLs A001, A002, A003, A004, A005, A006, A014)

9.0 DIGITAL SYSTEMS ENGINEERING:

9.1 Integrated Digital Environment (IDE):

The contractor may establish and participate in an Integrated Digital Environment (IDE) in cooperation with other contractors and the government. The IDE may be responsible for enabling interface model/models incorporation, data exchange methodologies, and seamless digital thread integration across all involved parties. The IDE may have contractor defined rules, project organization & management, model organization & customization, style, layout & naming conventions, and documentation requirements. (CDRL A019)

9.2 Model Based Systems Engineering (MBSE):

The contractor shall use a SysML compatible solution, per an MBSE Style Guide, capable of facilitating development of a MBSE model or models that defines the Authoritative Source of Truth (ASoT) for all necessary aspects of the conceptual system design. Access to view the MBSE system model and digital artifacts / models / threads being utilized on this program throughout the Period of Performance (PoP) shall be available to the government via the appropriate shared system access. The MBSE system model may be presented in design reviews at the level of detail and fidelity required by the entrance and exit criteria for that review. The MBSE system model may have rule validation sets to drive toward automated systems engineering technical reviews, milestones, certifications, and integrity programs. (CDRLs A011, A019)

9.3 Model Based Definition (MBD):

The contractor may use Computer Aided Design (CAD) software to document the Digital Product Definition (DPD) of all components and systems at the conceptual design level. The DPD may contain the fully annotated physical design of all components and systems to include dimensions, tolerances, materials, finishes and other notes to specify a complete product definition as defined in ASME Y14.41 Digital Product Definition Data Practices. The DPD may be ASoT data for physical designs of hardware in the MBSE System Model. The DPD may be appropriately connected via digital threads to ensure communication of DPD information between design disciplines. The DPD may be appropriately connected via digital threads to appropriate subcontractors to the greatest extent practical. (CDRLs A011, A016, A019)

9.4 Digital Engineering Plan (DEP):

The contractor shall develop a Digital Engineering Plan (DEP), to include in the detailed research plan, that describes the contractor's overall approach for setting up a collaborative digital environment and digital system engineering approach. This plan may include description of the digital threads, digital twins, tools, processes, and interfaces and their bi-directional traceability. The DEP may define how the contractors will connect to government owned IT systems and/or extend contractor systems to government owned facilities at all appropriate security levels in a collaborative digital environment. (A020)

9.5 Conceptual Design Technical Data Package (TDP):

The contractor shall develop relevant data-centric deliverables generated in this effort that cover the models, data, and digital systems engineering products, representing the weapon system and associated engine concept. The TDP should include a level of detail appropriate to permit independent assessment the weapon system and associated engine concept designs in follow-on military utility studies. Model, data, and products should be utilized and/or developed under the program to allow delivery of applicable source code to the maximum extent possible. (A011, A015)

9.6 Acquisition and Sustainment Data Package (ASDP):
The contractor shall capture a collection of relevant data-centric deliverables generated in this effort that cover the models, data, and digital systems engineering products created through the conceptual design process. The ASDP should include a level of detail appropriate to support follow-on independent research. Model, data, and products should be utilized and/or developed under the program to allow delivery of applicable source code to the maximum extent possible. (A019)

Additional Information regarding this SOO:

Based on funding projections, the Government plans to award multiple contracts to promote competition for both RelNav and boom automation development. In the event additional funding becomes available, the Government may award additional contracts under this SOO.

Period of Performance:

33 months for the technical effort (plus 3 months for the Final Report)

Technical Performance Measures (TPM):

The technical performance measure, with proposed objective and threshold time criteria, for conceptual design and assessment. This TPM supports the program objective to rapidly demonstrate new capabilities and reduces risk to the development timeline for RelNav and Boom Automation.

Table 1 RelNav TPM

Technical Performance Parameter	Threshold	Objective
Capability Assessment	4 months	3 months
Integrated Conceptual Design Process	6 months	3 months
Demonstration & Validation Plan	12 months	6 months
Proof of Concept Flight Demonstration Event	33 months	27 months

Table 2 Boom Automation TPM

Technical Performance Parameter	Threshold	Objective
Capability Assessment	4 months	3 months
Integrated Conceptual Design Process	6 months	3 months
Demonstration & Validation Plan	12 months	6 months
Proof of Concept Laboratory Demonstration Event	24 months	21 months

CDRL Requirements:

A001 Scientific and Technical Reports, Final Report

A002 Funds and Man-Hour Expenditure Reports

A003 Contractor Spend and Expenditure Plan

A004 Contract Funds Status Report

A005 Status Report

A006 Presentation Material

A007 Technical Information Report, SF 424 Annual Update

A008 Computer software product: source code

A009 Test Plan

A010 System/Subsystem Design Description

A011 Technical Data Package

A012 Scientific and Technical Reports, Interim Report

A013 Digital Imaging

A014 Operations Security (OPSEC) Plan

A015 Conceptual Design Drawings and Associated Lists

A016 Developmental Design Drawings and Associated Lists

A017 Systems Engineering Management Plan

A018 System Architecture Model

A019 Acquisition and Sustainment Data Package (ASDP) Technical Report

A020 Model Based Systems Engineering (MBSE) Development Plan (MDP)

A021 Model-Based Engineering Failure Modes, Effects, and Criticality Analysis Profile (SYSML Version)

Contract Type: Cost-Plus Fixed Fee.

Earned Value Management System (EVMS): EVMS will not apply.

Security Classification: up to Secret as appropriate for each contract.

Government Research Facilities:

No AFRL research facilities are expected to be used. If the use of AFRL research facilities and their associated government and/or contractor operational work force are required to perform this contract, availability of these facilities including hardware requirements and/or facility modifications must be noted in the white paper and coordinated with the AFRL POC, prior to submission of 2nd Step full proposals. Documentation of this coordination in the form of a letter must be included in the 2nd step full contract proposal. Research performed in an AFRL facility will not impact the above notional funding budget. If the use of Government R&D research facilities from a source other than AFRL/RQ is part of the offeror's plan, a coordination letter identifying availability of the research facilities and estimated costs from that government agency must be included in the contract proposal. Since this cost will be directly funded from AFRL to the other Government agency, the cost of performing the tasks will be subtracted from the notional budget identified above. Specific details regarding use of these research facilities are not considered final until completion of contract negotiations.

Government Furnished Property (GFP):

GFP is not anticipated. However, if GFP is required to perform contract tasks, it must be identified in white paper and availability for contract must be coordinated with the AFRL POC, prior to submission of 2nd Step proposals. Documentation of this coordination with must be included in the 2nd step contract proposal. If the use of GFP from a source other than AFRL/RQ is part of the offeror's plan, a coordination letter identifying availability of the GFP from that government agency must be included in the contract proposal. Specific details regarding use of GFP is not considered final until completion of contract negotiations.

Government Furnished Information (GFI):

GFI will be available per directions of the PACER call. GFI should inform contractor's response. The document library will include at minimum:

AFRL-RB-WP-TR-2012-0063: Automated Aerial Refueling (AAR) Phase II Integrator Final Report

AFRL-RB-WP-TR-2012-0068: Automated Aerial Refueling (AAR) Phase II Integrator System/Segment Specification Guide Volume 1: AAR System

AFRL-RB-WP-TR-2012-0069: Automated Aerial Refueling (AAR) Phase II Integrator System/Segment Specification Guide Volume 2: AAR Receiver Segment

AFRL-RB-WP-TR-2012-0070: Automated Aerial Refueling (AAR) Phase II Integrator System/Segment Specification Guide Volume 3: AAR Tanker Segment

AFRL-RB-WP-TR-2012-0071: Automated Aerial Refueling (AAR) Phase II Integrator System/Segment Specification Guide Volume 4: AAR Mission Control Station Segment

AFRL-RB-WP-TR-2012-0072: Automated Aerial Refueling (AAR) Phase II Integrator System/Segment Specification Guide Volume 5: AAR State Transitions Tables

AFRL-RB-WP-TR-2012-0073: Automated Aerial Refueling (AAR) Phase II Integrator System/Segment Specification Guide Volume 6: AAR System Architecture

AFRL-RB-WP-TR-2012-0077: Automated Aerial Refueling (AAR) Phase II Integrator Concept of Operations (CONOPS)

SURVIAC-TR-12-2182: SIMULATION EVALUATION REPORT Automated Aerial Refueling (AAR) Program Cell Operations Concept of Operations (CONOPS) Assessment Simulation 5: Summary Assessment

SURVIAC-TR-12-3576: Simulation Evaluation Report: Automated Aerial Refueling (AAR) Program Phase II Fighter Concept of Operations (CONOPS) Assessment

AFLCMC Future Tanker MBSE style Guide

White Paper Technical/Management Page Limitation: 10 pages.

References:

1. https://www.wpafb.af.mil/News/Article-Display/Article/399478/automated-aerial-refueling-team-tests-advanced-sensors/
2. https://www.navair.navy.mil/node/22191
3. https://ntrs.nasa.gov/api/citations/20080008570/downloads/20080008570.pdf
4. https://www.darpa.mil/about-us/timeline/autonomous-highaltitude-refueling
5. https://www.navair.navy.mil/product/MQ-25tm-Stingray
6. Technical Report AFRL-RB-WP-TR-2012-0077: Automated Aerial Refueling (AAR) Phase II Integrator Concept of Operations (CONOPS), 2012.
7. https://coi.japcc.org/app/uploads/ATP-3.3.4.2-EDD-V1-E-6.pdf
8. https://coi.japcc.org/app/uploads/ATP-3.3.4.10-ED1-V1-E-1.pdf
9. Technical Report AFRL-RB-WP-TR-2012-0068: Automated Aerial Refueling (AAR) Phase II Integrator System/Segment Specification Guide Volume 1: AAR System, 2012.

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A001	SCIENTIFIC AND TECHNICAL REPORTS	Final Report	

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-MISC-80711A/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
XX	D	ONE/R	See Block 16*

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
A	End of Tech Effort	See Block 16*

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	1	1	0
AFRL/RQON	1	1	0
15. TOTAL →	2	2	0

16. REMARKS

Block 4: Document format shall minimally conform to guidance described in the attached ANSI-based AFRL Format Guidelines. Include a completed Standard Form (SF) 298. If the Final Report contains data that is being delivered with less-than-unlimited rights, the data shall be appropriately marked within the Final Report.

NOTE: When the sensitivity of STINFO in draft and final deliverable documents meets the requirements of Controlled Unclassified Information (CUI) as dictated by EO 13556, "Controlled Unclassified Information," contractors must properly mark pages of their submitted documents with the acronym “CUI” at the top and bottom of each page and include the CUI designation indicator on the title page.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only. (Critical Technology) (21 February 2024). Refer other requests for this document to AFRL/RQ.

WARNING - This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., sec 2778 et seq., as amended) or the Export Administration Act of 1979, as amended, Title 50, U.S.C. App 2401 et seq. Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DoD Directive 5230.25.

DESTRUCTION NOTE -... (continued on next page)

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST

(1 Data Item)

A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER N/A REF: DOD 5010.12-I AMSDL
0001	A	

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

16. REMARKS *(Continued)*

Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

NOTE: All digital files shall be encrypted or password protected in transmission; passwords shall be provided in a separate communication.

Block 10: The contractor shall deliver the Scientific and Technical Report, in final format, no later than the date specified in the Schedule. USAF will review and, if necessary, return the report with comments no later than the date specified in the Schedule. If the report is returned to the contractor with comments, the contractor shall deliver the publication-ready copy of the report no later than the date specified in the Schedule.

Block 11: End of Technical Effort.

Block 12. 30 days from Block 11. Approval/disapproval by letter from the Air Force Program Manager within 30 days after receipt. Disapproval requires correction/resubmission within 30 days after receipt of Air Force comments.

The contractor shall deliver a draft of the final report IAW the ANSI-based AFRL Format Guidelines (attached), in editable MS Word format and editable PDF on appropriately labeled CD-ROM or DVD (label to include report title, contract number, CUI markings as required, distribution statement, and any data rights and/or export control notices) via approved postal delivery service, or as an attachment on a secure e-mail or sharing through other secure network systems such as DoD SAFE within 30 calendar days after completion of the technical effort. The AFRL Program Manager will take no more than 30 calendar days after delivery to review the draft final report and return technical and STINFO comments to the contractor. The contractor shall incorporate the combined STINFO and technical comments.

Block 13: End of Contract, 90 days from Block 11. The contractor shall deliver the final version of the report in publication-ready condition within 60 calendar days after the date of the draft submission (date in Block 12). The final report shall be delivered as described in the instruction in Block 12 above.

NOTE: Submittal of DD Form 250Z, Final Receiving Report or WAWF prior to acceptance notification will result in rejection of the Final Receiving Report. Hard date indicating when final tech report is due can be found in Section F in the contract.

The report will be published with the Defense Technical Information center (DTIC) by the AFRL STINFO officer.

Under no circumstances shall the contractor submit any version of the scientific and technical report to DTIC.

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A002	FUNDS AND MAN-HOUR EXPENDITURE REPORT		

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-FNCL-80331A/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	B	MTHLY	**

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	*	**

16. REMARKS

Tailored to allow contractor's format.

* At the close of the contractor's monthly accounting period.

** 25 days after Block 11 time.

Submit electronically. Electronic submittals shall be encrypted or password protected.

BLOCK 9: B: Distribution authorized to US Government agencies only.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
/ACO	0	1	0
AFRL/RQ	0	1	0
AFRL/RQF	0	1	0
AFRL/RQKPD	0	1	0
15. TOTAL →	0	4	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST

(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A003	CONTRACTOR SPEND AND EXPENDITURE PLAN		

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-MGMT-82355/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	B	MTHLY	**

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	*	**

16. REMARKS

Tailored to allow contractor's format.

* At the close of the contractor's monthly accounting period.

** 25 days after Block 11 time.

Submit electronically. Electronic submittals shall be encrypted or password protected.

BLOCK 9: B: Distribution authorized to US Government agencies only.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	0	1	0
/ACO	0	1	0
AFRL/RQF	0	1	0
AFRL/RQKP	0	1	0
15. TOTAL →	0	4	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A004	CONTRACT FUNDS STATUS REPORT (CFSR)		

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-MGMT-81468A/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	B	QRTLY	**

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	*	***

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	0	1	0
/ACO	0	1	0
AFRL/RQF	0	1	0
AFRL/RQKP	0	1	0
15. TOTAL →	0	4	0

16. REMARKS

Tailored to alow contractor's format. Tailored so that the report contains forecasts by month for the next six months, by quarter for the remaining fiscal year, and by year for the remaining fiscal years. CFSR data shall be reconciled to the Governments fiscal year end at 30 September if the contractor's fiscal year end does not coincide with the Government's fiscal year end.

* The last day of the contractor's monthly accounting period nearest the end of the governments fiscal year quarter.

** The initial submission shall be within 25 calendar days after the close of the contractor's monthly accounting period nearest the end of the first government fiscal year quarter after contract award.

***Subsequent submissions shall be 25 calendar days after Block 11 time.

Submit electronically. Electronic submittals shall be encrypted or password protected.

BLOCK 9: B: Distribution authorized to US Government agencies only.

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
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Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A005	STATUS REPORT		

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-MGMT-80368A/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	MTHLY	**

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	*	**

16. REMARKS

Tailored to allow contractor's format and to delete para 3.2.3.

Submit electronically, except when final report is due to be submitted, then omit this item.

* At the close of the contractor's monthly accounting period.

** 25 days after Block 11 time.

Submit electronically. Electronic submittals shall be encrypted or password protected.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	0	1	0
/ACO	0	1	0
AFRL/RQKPD	0	1	0
15. TOTAL →	0	3	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A006	PRESENTATION MATERIAL		

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-ADMN-81373/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ASREQ	*

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	*	

16. REMARKS

Tailored to require only view graphs and hard copy. Submittal of the actual viewgraph is not required if the presentation is computer generated.

ASREQ means as required to document topics under discussion at briefings and reviews.

* Submit at each briefing or review as appropriate.

Maximum # of view graphs shall not exceed 200 for this contract.

Submit electronically. Electronic submittals shall be encrypted or password protected.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	0	1	1
15. TOTAL →	0	1	1

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

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OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A007	TECHNICAL INFORMATION REPORT	SF 424 Annual Update	

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-MISC-80652/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ANNLY	*

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	12MAC	** R/ASR

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ Security	0	1	0
15. TOTAL	0	1	0

16. REMARKS

Tailored to allow for actual standard Form 424 Research and Related Senior Key Person Profile is preferred or Contractor Format is acceptable. Submit electronically in Microsoft Office Suite compatible format, PDF, or RTF as coordinated with the COTR. For email delivery include the contract number in the subject line.

Provide update and supplements to this document as appropriate during the period of performance. Identify changes from previous versions. Permanent change pages shall conform to the requirements, quality, style and format of the basic documentation.

* 30 days after Block 11.

** Every 12 months after Block 12 through out the technical effort.

R/ASR means revisions as required to keep the SF24 up to date, make changes or corrections; submit revisions as generated.

Submit reproducible on media compatible with MS-Office for Windows.

Submit classified Data (up to and including SECRET) via the SIPRNET or as coordinated with the requiring office. Submit Export Controlled Data as coordinated with the coordinating with the requiring office.

Submit electronically. Electronic submittals shall be encrypted or password protected.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

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0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A008	COMPUTER SOFTWARE PRODUCT	Source Code	

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-IPSC-81488/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ASGEN	ASGEN

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	N/A	ASGEN

16. REMARKS

Tailored to allow contractor's format.

* Submit with software for this technical effort. Delivery of Software shall be inclusive of software source code and executable.

Submit electronically. Electronic submittals shall be encrypted or password protected.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	0	1	0
15. TOTAL →	0	1	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE
A009	TEST PLAN	FLIGHT AND TAXI TEST PLAN

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE
DI-NDTI-80566A/T	CSOW	AFRL/RQ

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ASREQ	*

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
A	N/A	**

17. PRICE GROUP

18. ESTIMATED TOTAL PRICE

16. REMARKS

Tailored to require the attached AFRL Flight and Taxi Test Plan format.

ASREQ means as required to document plans for flight and taxi testing through out this effort.

Submit electronically.

* 8 weeks prior to testing.

Approval/disapproval by letter from the Air Force Program Manager within 2 weeks after AFRL SRB and TRB Review.

**Disapproval requires correction/resubmission within 1 week after receipt of Air Force comments.

NOTE: Testing shall not begin until after contractor receipt of Air Force notice to proceed with testing.

Submit electronically. Electronic submittals shall be encrypted or password protected.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	1	1	0
AFRL/DO	1	1	0
15. TOTAL →	2	2	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST

(1 Data Item)

Form Approved
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0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A010	SYSTEM/SUBSYSTEM DESIGN DESCRIPTION (SSDD)		

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-IPSC-81432A/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ASGEN	ASGEN

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	N/A	ASGEN

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	0	1	0
15. TOTAL →	0	1	0

16. REMARKS

Tailored to allow contractor's format.

Submit electronically. Electronic submittals shall be encrypted or password protected.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Department of Defense, Executive Services and Communications Directorate (0704-0188). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **Please do not return your form to the above organization. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.**

A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A011	TECHNICAL DATA PACKAGE		

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-SESS-80776A/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ASGEN	ASGEN

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	N/A	ASGEN

16. REMARKS

Tailored to allow contractor's format.

Submit electronically. Electronic submittals shall be encrypted or password protected.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	0	1	0
15. TOTAL →	0	1	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER N/A REF: DOD 5010.12-I AMSDL
0001	A	

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A012	SCIENTIFIC AND TECHNICAL REPORTS	Interim Report	

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-MISC-80711A/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ASREQ	ASREQ

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	N/A	R/ASR

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	0	1	0
15. TOTAL	0	1	0

16. REMARKS

Tailored to allow contractor's format.

* At 90 days and every 90 days thereafter.

** 30 days after Block 11 time.

Submit electronically. Electronic submittals shall be encrypted or password protected.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

ASREQ means as required to document any miscellaneous results
under this effort.

R/ASR means revisions as required to keep the Interim Report up to date, make changes or corrections; submit revisions as generated.

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A013	DIGITAL IMAGING		18. ESTIMATED TOTAL PRICE

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE
DI-MISC-81579/T	CSOW	AFRL/RQ

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ASGEN	*

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	N/A	*

16. REMARKS

Tailored to allow contractor's format.

* Submit as generated.

DO NOT SUBMIT CLASSIFIED PHOTOS OR NEGATIVES TO 88ABW/PAV, 255-3645.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

Submit electronically. Electronic submittals shall be encrypted or password protected.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	1	1	0
15. TOTAL →	1	1	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A014	OPERATIONS SECURITY (OPSEC) PLAN		

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-MGMT-80934/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ASREQ	ASREQ

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	CONTRACT AWARD	R/ASR

16. REMARKS

Tailored to allow contractor's format.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

Submit electronically. Electronic submittals shall be encrypted or password protected.

ASREQ means as required to document the OPSEC Plan under this effort.

R/ASR means revisions as required to keep the OPSEC Plan up to date, make changes or corrections; submit revisions as generated.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	1	1	0
15. TOTAL →	1	1	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A015	CONCEPTUAL DESIGN DRAWINGS/MODELS AND ASSOCIATED LISTS		

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-SESS-81001D/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ASREQ	ASREQ

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	N/A	R/ASR

16. REMARKS

Tailored to allow contractor's format as defined in the attached TDP Option Selection Worksheet DD Form 2554-1.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

Submit electronically. Electronic submittals shall be encrypted or password protected.

ASREQ means as required to document the conceptual design drawings/models under this effort.

R/ASR means revisions as required to keep the conceptual design drawings/models and associated lists up to date, make changes or corrections; submit revisions as generated.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	1	1	0
15. TOTAL →	1	1	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A016	DEVELOPMENTAL DESIGN DRAWINGS/MODELS AND ASSOCIATED LISTS		

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-SESS-81002F/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ASREQ	*

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
A	N/A	R/ASR

16. REMARKS

Tailored to allow contractor's format as defined in the attached TDP Option Selection Worksheet DD Form 2554-1.

ASREQ means as required to document the developmental design drawings/models and associated lists under this effort.

* Submit at the first design review.

Approval/disapproval by letter from the Air Force Program Manager within 30 days after receipt. Disapproval requires correction/resubmission within 30 days after receipt of Air Force comments.

R/ASR means revisions as required to maintain up to date and accurate drawings and lists. Revisions are subject to the approval cycle as stated.

Reproducible shall be the original digital file on CD-ROM compatible with MS-Office.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

Submit electronically. Electronic submittals shall be encrypted or password protected.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	1	1	0
15. TOTAL →	1	1	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A017	SYSTEM ENGINEERING MANAGEMENT PLAN (SEMP)		

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-MGMT-81024/T	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ASREQ	ASREQ

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	N/A	R/ASR

16. REMARKS

Tailored to allow contractor's format.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

Submit electronically. Electronic submittals shall be encrypted or password protected.

ASREQ means as required to document the SEMP under this effort.

R/ASR means revisions as required to keep the SEMP up to date, make changes or corrections; submit revisions as generated.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	1	1	0
15. TOTAL →	1	1	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A018	System Architecture Model (SAM)		

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-SESS-82400	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ASREQ	ASREQ

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	N/A	R/ASR

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	1	1	0
15. TOTAL →	1	1	0

16. REMARKS

Tailored to allow contractor format.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

Submit electronically. Electronic submittals shall be encrypted or password protected.

ASREQ means as required to document the SAM under this effort.

R/ASR means revisions as required to keep the SAM up to date, make changes or corrections; submit revisions as generated.

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A019	Acquisition and Sustainment Data Package (ASDP) Technical Report		

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-SESS-82361	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ASREQ	ASREQ

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	N/A	R/ASR

16. REMARKS

* Technical Report

Tailored to allow contractor's format

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

Submit electronically. Electronic submittals shall be encrypted or password protected.

ASREQ means as required to document the acquisition and sustainment data under this effort.

R/ASR means revisions as required to keep the ASDP Technical Report up to date, make changes or corrections; submit revisions as generated.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	0	1	0
15. TOTAL →	0	1	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST
(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A020	Model Based Systems Engineering (MBSE) *		18. ESTIMATED TOTAL PRICE

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE
DI-SESS-82380	CSOW	AFRL/RQ

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	ASGEN	1 MAC

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
N/A	N/A	R/ASR

16. REMARKS

* Development Plan (MDP)

Tailored to allow contractor's format.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

Submit electronically. Electronic submittals shall be encrypted or password protected.

R/ASR means revisions as required to keep the MBSE up to date, make changes or corrections; submit revisions as generated.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	1	1	0
15. TOTAL	1	1	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

CONTRACT DATA REQUIREMENTS LIST

(1 Data Item)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER
0001	A	N/A REF: DOD 5010.12-I AMSDL

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Q2PY	FA2391-23-S-2403	

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE	17. PRICE GROUP
A021	Model-Based Engineering Failure Modes, Effects, *		

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE	18. ESTIMATED TOTAL PRICE
DI-SESS-82426	CSOW	AFRL/RQ	

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT	D	2 TIMES	24 MAC
8. APP CODE		**11. AS OF DATE**	**13. DATE OF SUBSEQUENT SUBMISSION**
N/A		N/A	30 MAC

16. REMARKS

* and Criticality Analysis Profile (SYSML Version)

Tailored to allow contractor's format.

BLOCK 9: D: Distribution authorized to DoD and US DoD contractors only.

Submit electronically. Electronic submittals shall be encrypted or password protected.

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
AFRL/RQ	1	1	0
15. TOTAL →	1	1	0

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
Kevin E. Mauersberg AFRL/RQ (937) 656-5675 Ext:	21-FEB-2024		

INSTRUCTIONS FOR COMPLETING DD FORM 1423

(See DoD 5010.12-M for detailed instructions.)

FOR GOVERNMENT PERSONNEL

Item A. Self-explanatory.

Item B. Self-explanatory.

Item C. Mark (X) appropriate category: TDP - Technical Data Package; TM - Technical Manual; Other - other category of data, such as "Provisioning,""Configuration Management," etc.

Item D. Enter name of system/item being acquired that data will support.

Item E. Self-explanatory (to be filled in after contract award).

Item F. Self-explanatory (to be filled in after contract award).

Item G. Signature of preparer of CDRL.

Item H. Date CDRL was prepared.

Item I. Signature of CDRL approval authority.

Item J. Date CDRL was approved.

Item 1. See DoD FAR Supplement Subpart 4.71 for proper numbering.

Item 2. Enter title as it appears on data acquisition document cited in Item 4.

Item 3. Enter subtitle of data item for further definition of data item (optional entry).

Item 4. Enter Data Item Description (DID) number, military specification number, or military standard number listed in DoD 5010.12-L (AMSDL), or one-time DID number, that defines data content and format requirements.

Item 5. Enter reference to tasking in contract that generates requirement for the data item (e.g., Statement of Work paragraph number).

Item 6. Enter technical office responsible for ensuring adequacy of the data item.

Item 7. Specify requirement for inspection/acceptance of the data item by the Government.

Item 8. Specify requirement for approval of a draft before preparation of the final data item.

Item 9. For technical data, specify requirement for contractor to mark the appropriate distribution statement on the data (ref. DoDD 5230.24).

Item 10. Specify number of times data items are to be delivered.

Item 11. Specify as-of date of data item, when applicable.

Item 12. Specify when first submittal is required.

Item 13. Specify when subsequent submittals are required, when applicable.

Item 14. Enter addressees and number of draft/final copies to be delivered to each addressee. Explain reproducible copies in Item 16.

Item 15. Enter total number of draft/final copies to be delivered.

Item 16. Use for additional/clarifying information for Items 1 through 15. Examples are: Tailoring of documents cited in Item 4; Clarification of submittal dates in Items 12 and 13; Explanation of reproducible copies in Item 14.; Desired medium for delivery of the data item.

FOR THE CONTRACTOR

Item 17. Specify appropriate price group from one of the following groups of effort in developing estimated prices for each data item listed on the DD Form 1423.

a. Group I. Definition - Data which is not otherwise essential to the contractor's performance of the primary contracted effort (production, development, testing, and administration) but which is required by DD Form 1423.

Estimated Price - Costs to be included under Group I are those applicable to preparing and assembling the data item in conformance with Government requirements, and the administration and other expenses related to reproducing and delivering such data items to the Government.

b. Group II. Definition - Data which is essential to the performance of the primary contracted effort but the contractor is required to perform additional work to conform to Government requirements with regard to depth of content, format, frequency of submittal, preparation, control, or quality of the data item.

Estimated Price - Costs to be included under Group II are those incurred over and above the cost of the essential data item without conforming to Government requirements, and the administrative and other expenses related to reproducing and delivering such data item to the Government.

c. Group III. Definition - Data which the contractor must develop for his internal use in performance of the primary contracted effort and does not require any substantial change to conform to Government requirements with regard to depth of content, format, frequency of submittal, preparation, control, and quality of the data item.

Estimated Price - Costs to be included under Group III are the administrative and other expenses related to reproducing and delivering such data item to the Government.

d. Group IV. Definition - Data which is developed by the contractor as part of his normal operating procedures and his effort in supplying these data to the Government is minimal.

Estimated Price - Group IV items should normally be shown on the DD Form 1423 at no cost.

Item 18. For each data item, enter an amount equal to that portion of the total price which is estimated to be attributable to the production or development for the Government of that item of data. These estimated data prices shall be developed only from those costs which will be incurred as a direct result of the requirement to supply the data, over and above those costs which would otherwise be incurred in performance of the contract if no data were required. The estimated data prices shall not include any amount for rights in data. The Government's right to use the data shall be governed by the pertinent provisions of the contract.