1 Purpose

This Request for Solutions (RFS) is issued to identify capable vendors for the Aviation Virtual Training Suite (AVTS) environment. The Government will evaluate the solutions with the intent to competitively award one or multiple Other Transaction (OT) Agreements for prototype projects through the Training and Readiness Accelerator (TReX) Consortium.

2 Summary and Background

The United States Army Program Executive Office (PEO) Aviation (AVN) requires a prototype AVTS that will provide the essential common functionality for an Aviation platform product line which will enable training in critical tasks required for various aviation platforms. The final product line may include, but is not limited to, Black Hawk (UH60), Apache (AH64), Chinook (CH47), Lakota (UH72), and Unmanned Aerial Systems (UAS). These systems provide, as an example, Military Occupational Specialty (MOS) skill level development for response to tasks affected by specific conditions in; planning, preflight, aircrew briefing, run-up, operate specific onboard systems, general system operations, fault diagnosis, troubleshooting, adjustments, component removal/replacement, and other maintenance repair tasks and aviator tasks for the respective vehicle.

The initial prototype solution is to develop an on-client Unity-based application with the ability to select and execute formal training and individual development from prototype lessons for the UH60V and UH60M to create the baseline process and system to incorporate further development. As the UH60V is a new configuration, the Government will require demonstration of the utility of the trainer prototype in a classroom environment.

The materiel development activities for AVTS will include integrating courseware into the AVTS core which manages training resources and analytic review. The AVTS core manages all lessons which minimizes required IT touch-labor. The AVTS platform will utilize ECP standard equipment hosted on the Non-Secure Internet Protocol Router (NIPR) Net and personal computer/devices on private networks. It will be part of the TRADOC Cloud environment allowing the ability to share graphic resources between lessons and analytics to display data such as student progress throughout the lessons.
The delivered AVTS prototype solution(s) will support training at the point of need by leveraging the Training and Doctrine Command (TRADOC) Government Azure Cloud and applying a common Unity-based platform.

3 General Information

3.1 Attachment 1, AVTS Technical Supplement dated 21 August 2019 and appendices outline the technical program description and requirements of the prototype(s) based on assumptions of the current state of technology. Vendors are encouraged to challenge these assumptions in their individual solutions and should articulate any major discrepancies between the attached technical documentation and the vendor’s technical solution.

3.2 Vendors interested in responding to this Request for Solution must be members of the TReX consortium.

3.3 The cost of preparing and submitting a response is not considered an allowable direct charge to any Government contract or agreement.

3.4 This is to advise you that non-Government advisors will assist in the evaluation. The use of non-Government advisors will be strictly controlled. Non-Government advisors will be required to sign a Non-Disclosure Agreement for the AVTS RFS. Additionally, they shall also be required to submit documentation to the Agreements Officer indicating its personal stock holdings for a conflict of interest review in consultation with the legal advisor prior to being allowed access to source selection information.

3.5 After the non-Government advisors have completed their particular area of evaluation, they will be released from the evaluation process. All non-Government advisors will only have access to the information corresponding to its area(s) of expertise. They will not have access to the Price Volume of the response. The companies identified herein have agreed not to engage in the manufacture or production of hardware/services/R&D that is related to this effort, and to refrain from disclosing proprietary information to unauthorized personnel.

The following company will have non-Government personnel participating:
Request for Solutions (RFS)
PEOAVN; AVTS

4 Solution Paper Responses:

4.1 Solution Paper responses shall contain separate general, technical and price volumes. No pricing detail shall be provided in any volume other than the Price Volume. Each volume shall include the following:

4.1.1 General Volume
- Cover Page
- Nontraditional status
- Foreign Owned status
- Sub-vendor List
- Organizational Conflicts of Interest and Mitigation Plans

4.1.2 Technical Volume
- Solution Paper
- Data Rights and Assertions
- Anticipated Delivery Schedule

4.1.3 Price Volume
- Cover Page
- Cost and Pricing Breakdown
- Level 3 Contractor Work Breakdown Structure (CWBS)

4.2 General Volume

4.2.1 The cover page shall include the vendor's name, Commercial and Government Entity (CAGE) Code (if available), address, primary point of contact, and status of U.S. ownership.

4.2.2 Nontraditional Status Within the cover page the vendor shall provide its nontraditional (see paragraph 4.2.3 for definition) business status or your ability to meet the eligibility requirements of 10 U.S.C. §2371b on the cover page of your response. Within your response, please check the following applicable box – with appropriate justification if needed.

- There is at least one nontraditional defense contractor or nonprofit research institution participation to a significant extent in the project.
- All significant participants in the transaction other than the Federal Government are small businesses or nontraditional defense contractors.
- At least one third of the total cost of the project is to be provided by sources other than the Federal Government.
4.2.3 Definition Nontraditional – an entity that is not currently performing and has not performed, for at least one-year period preceding the solicitation of sources by the Department of Defense (DoD) for the procurement or transaction, any contract or subcontract for the DoD that is subject to full coverage under the cost accounting standards prescribed pursuant to 41 U.S.C §1502 and the regulations implementing such section.

4.2.4 Foreign Owned, Controlled or Influenced
In accordance with RFS Attachment 4, Security Process for Vetting Contractors, the cover page must include certification that the vendor (and subcontractor(s)) are not Foreign Owned or under USA Foreign Owned, Controlled or Influenced (FOCI) status (and are not in merger or purchasing discussions for a Foreign company or USA FOCI Company). Should a prospective vendor be unable to so certify, they will be ineligible for award unless the mitigating circumstances in Attachment 3 are met. In such a case, these mitigating circumstances shall be detailed in an appendix to the General Volume.

4.2.5 Sub-vendors
Provide a list of all sub-vendors involved and their role within the performance of your submission as an appendix to your technical submission. The list shall include the same information as requested for 4.2.4, excluding nontraditional business status.

4.2.6 Organizational Conflicts of Interest and Mitigation Plans
Vendors will submit an Organizational Conflict of Interest Mitigation Plan via an Appendix to its General Volume. In the event there are no real or perceived, simply state so and annotate what actions would be taken in the event that one is realized.

4.3 Technical Volume

4.3.1 The cover page shall include the vendor’s name, Commercial and Government Entity (CAGE) Code (if available), address, primary point of contact, and status of U.S. ownership.

4.3.2 Solution Paper responses should clearly address planned documentation deliverables (including format and content) and any planned demonstrations, design reviews, and management reviews. Responses shall be submitted in an executable (not scanned) Adobe PDF format and limited to no more than 15 pages, using standard 12-point Arial font. Any charts or figures are not bound by the 12-point font requirement but shall be clearly legible.

4.3.3 The vendor’s proposed technical solution shall describe its approach to providing the solution with the system characteristics described in the attached technical supplements. The solution shall describe how the vendor plans to provide all of the major capabilities as well as a description of:
1. A design approach that demonstrates a thorough understanding of desired product line system architecture, prototype objectives, and modular approach to key subsystems.
2. A design solution that can support training at the point of need.
3. Team composition and subcontractor involvement.
4. Recent (within the past 5 years) and demonstrable expertise in configuration management relevant to product line development.
5. A detailed approach to demonstrate the required capabilities and manage the follow-on activities described in Section 8 and capability to manage simultaneous development and production efforts for multiple programs/platforms.

4.3.3 The above capabilities are not listed in any specific order of priority and are provided to help focus vendor responses. In addition to describing the approach to delivering these capabilities, the technical solution shall also include a full discussions of:

a) Anticipated development risks.
b) Proposed timeline tied to milestone activities. The estimated period of performance for completion of phases one and two is 21 months.

The vendor shall include the anticipated delivery dates with their solution that includes all AVTS capabilities and completion dates for all tasks and task stages as described in the RFS.

4.3.4 Phase 1: Initial Prototype Development

Prototype courseware and lesson plans will be validated by the Government utilizing Government-owned cloud distribution on both commercial and Government networked hardware. Prototype courseware shall operate on Government hardware that are RMF and CAC compliant, as found in Army Regulation AR 25-1 and Army Regulation AR 25-2.

**Technical Objective #1:** Utilizing the AVTS core, develop up to five (5) lessons. The lessons shall be compliant with the approved AVTS Core architecture, satisfy the AVTS Core requirements, and satisfy the training specific requirements as defined in the Training Support Packet (TSP); see attachment. The specific lessons shall be demonstrated on commercial and Government hardware that are RMF and CAC compliant.

**Technical Objective #2:** Develop to scale, 3-D software models for the lessons developed in Technical Objective #1. The lessons from Objective #1 and shall be compliant with the current AVTS architecture, and be representative of the true aircraft functionality and specific requirements as defined in the airframe technical manuals and AVTS core Standard Operating Procedures (SOP). The
courseware specific lessons shall be demonstrated on commercial and Government hardware that are RMF and CAC compliant.

**Technical Objective #3:** Develop three (3) mobile applications that leverage models in technical objective #2. The applications shall be compliant to satisfy the aircraft specific requirements. The applications will enable users to reinforce established AVTS courseware. The mobile applications will function on iOS, Android, and Windows platforms/devices.

**Phase 1 Outcomes:**

1. The Government will update - System Architecture Description and diagrams during the prototype phase
2. Courseware Source Code
3. Mobile Application Source Code
4. Updated Design and Interface documentation
5. Updated Verification/Validation documentation

**Estimated Timeline and Completion Criteria:** The Government anticipates that this phase will be approximately six to nine months. At the Government’s discretion, Phase 2 may begin prior to full completion of Phase 1.

**Phase 2: Extensibility Demonstration**

Phase 2 will validate that the prototype can support asynchronous training on multiple lessons within multiple locations. An extensibility demonstration is required to validate that the prototype is capable of accommodating the additional complexity of the 3-D software models and will be used to assess the feasibility of the prototype in an operational environment. This will be accomplished by developing up to 25 additional lessons to validate that the functionality and fidelity of the 3-D software models developed in Phase 2 along with any additional 3-D models required by the additional lessons. This phase will also demonstrate the suitability of the prototype to satisfy the training throughput in a networked environment, capture data analytics, and capture learner progress.

Phase 2 may be considered a milestone decision TSPnt for entry into follow-on activities. The prototype effort will be considered complete upon the successful demonstration of the Phase 2 Objective and the acceptance of the Phase 2 prototype(s).

**Technical Objective #1:** Demonstrate the extensibility of the Phase #1 and the Phase #2 requirements by developing up to 25 additional lessons. The prototypes will be demonstrated at Ft. Rucker, AL, and Fort Eustis, VA, and Redstone Arsenal, AL. Prototypes will be compliant with the approved baseline developed in Phase 1, the TSP, and aviation technical manuals.
demonstration will include the group and individual training capabilities of the AVTS. The prototypes shall meet all applicable network, Risk Management Framework (RMF), Shareable Content Object Reference Model (SCORM), and Experience Application Programming Interface (xAPI) requirements.

**Phase 2 Outcomes:**

1. All Product Definition Data (PDD)
2. Delivery of all Source Code
3. Updated Interface Capability and Interface Design Documents (ICD/IDD)
4. Updated System Specifications
5. Updated Design Documentation (including Software Design Description)

This effort will require the vendor to work with stakeholders to attain the appropriate accreditation by providing development detail and Cyber Security scans at each build to ensure adherence to Security Technical Implementation Guides (STIG) and Risk Management Framework (RMF) requirements.

**Estimated Timeline and Completion Criteria:** Approximately 10-12 months following the decision to enter Phase 2. The Government does not anticipate that this phase will exceed 12 months. The prototype effort will be considered complete upon the successful completion of Phase 2 Objective and the acceptance of the Phase 2 prototype(s)

**4.3.6 GFE/GFP/GFI**

The Government will make available existing trainer design, operation, and maintenance documentation for use during solution preparation. In order to obtain the documentation, the contractor shall submit a request in writing to INITIATIVES@NSTXL.ORG, with “AVTS” used in the subject line.

The GFI will contain the Distribution D classification and will require the vendor to be vetted to obtain the GFI. Once the vendor is vetted, the vendor will then be required to complete and sign a Distribution Agreement. The documentation will then be available for pickup in person at PEO STRI, Orlando, FL, or at either of the site visit locations. The Distribution Agreement will provide further guidance regarding the handling of GFI after OTA award.

The Government will provide additional Government Furnished Information (GFI) within 15 days after award of agreement. The GFI will include (does the AVTS team intend on releasing additional GFI after award? If so, please list here).

**4.3.7 Government Desired Rights in Technical Data and Computer Software**

**4.3.7.1** The following definitions apply to this section.

4.3.8.1(a) Government purpose rights means the right to use, modify, reproduce, release, perform, display, or disclose technical data within the Government
without restriction; and release or disclose technical data outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform, display, or disclose technical data for United States government purposes. The five-year period, or such other period as may be negotiated, would commence upon execution of the Other Transaction Agreement that required development of the items, components, or processes or creation of the data. The Vendor will have the exclusive right, including the right to license others, to use technical data in which the Government has obtained government purpose rights under this agreement for any commercial purpose during this five-year period. Upon expiration of the five-year or other negotiated period, the Government would receive unlimited rights in the technical data and computer software.

4.3.7.1(b) Unlimited rights means rights to use, modify, reproduce, perform, display, release, or disclose technical data in whole or in part, in any manner, and for any purpose whatsoever, and to have or authorize others to do so.

4.3.7.1(c) Limited rights means the rights to use, modify, reproduce, release, perform, display, or disclose technical data, in whole or in part, within the Government. The government may not, without the written permission of the party asserting limited rights, release or disclose the technical data outside the Government, use the technical data for manufacture, or authorize the technical data to be used by another party, except that the Government may reproduce, release, or disclose such data or authorize the use or reproduction of the data by persons outside the Government if—
   (i) The reproduction, release, disclosure, or use is—
   (A) Necessary for emergency repair and overhaul; or
   (B) A release or disclosure to—
      (1) A covered Government support contractor in performance of its covered Government support contract for use, modification, reproduction, performance, display, or release or disclosure to a person authorized to receive limited rights technical data; or
      (2) A foreign government, of technical data other than detailed manufacturing or process data, when use of such data by the foreign government is in the interest of the Government and is required for evaluation or informational purposes;
   (ii) The recipient of the technical data is subject to a prohibition on the further reproduction, release, disclosure, or use of the technical data; and
(iii) The contractor or subcontractor asserting the restriction is notified of such reproduction, release, disclosure, or use.

4.3.7.1(d) Restricted rights applies only to noncommercial computer software and has the meaning included in Defense Federal Acquisition Regulation Supplement 252.227-7014(a)(15).

4.3.7.2 All rights in Technical Data and Computer Software are negotiable based on the vendor’s proposed solution. The Government seeks Unlimited Rights to all development and deliverables of technical data and computer software funded under the transaction agreement.

4.3.7.3 The vendor shall describe the intellectual property rights being provided to the Government in terms of technical data, both in software and hardware, clearly outlining any rights restrictions. If the proposed solution includes commercial software, copies of any applicable End User License Agreements (EULAs) must be submitted with the response. It is the Government's intent to plan for the concurrency, maintenance, and modification of the Suite using Government personnel and third party contractors. If additional pages are needed, data rights assertions may be submitted as an appendix, which has no page limit and does not count against the proposed technical solution page limitation.

4.3.7.4 The vendor shall make a willful attempt to analyze feasible non-proprietary solutions and incorporate them when applicable to the effort. This includes, but is not limited to, software rights, data, source code, drawings, manuals, warranties, and integration efforts. The vendor shall clearly state all assumptions made during development of responses.

4.3.7.5 The vendor shall include the anticipated delivery dates with their solution that includes all AVTS capabilities and completion dates for all tasks and task stages as described in the RFS.

4.4 Price Volume

4.4.1 The cover page shall include the Vendor’s name, Commercial and Government Entity (CAGE) Code (if available), address, primary point of contact, and status of U.S. ownership.

4.4.2 Vendors shall submit a fixed amount price for its solution, further divided into severable milestones. The Government is not dictating a specific price mechanism. However, proposed payments should be linked to clearly definable, detailed milestones in each phase. It should be clear, with sufficient detail, what is being delivered at each milestone. The vendor’s pricing milestones may vary from the defined decision points, depending on the proposed solution. Pricing submission shall be submitted in a separate document with no pricing detail provided in the solution papers. The price volume has no page number limitation.
4.4.2 The vendor shall include the anticipated delivery dates with their solution that includes all AVTS capabilities and completion dates for all tasks and task stages as described in the RFS.

4.4.3 Vendors shall provide a Rough Order of Magnitude (ROM) pricing for potential follow-on production activities.

5 RFS Response Instructions:

5.1 The Government intends to award one Other Transaction Agreement as a result of this Request for Solution; however, more than one award may be made if determined to be in the Government’s best interest.

5.2 All questions related to this RFS should be submitted in writing to initiatives@nstxl.org, with “AVTS” used in the subject line.

5.3 Questions must be submitted no later than 12:00 PM EDT 27 September 2019. Questions received after the deadline may not be answered. Questions shall not include proprietary data.

5.4 The Government reserves the right to post submitted questions and answers, as necessary (and appropriate) to facilitate vendor Solution Paper responses. Submitted questions will be posted without identifying company names.

5.5 Responses shall be submitted no later than 12:00 PM EST on 28 October 2019. Your response shall be submitted electronically to initiatives@nstxl.org, with “AVTS” used in the subject line. Any submissions received after the deadline may be rejected as late and not considered.

6 Selection Process

6.1 Solution papers will be evaluated with consideration given to the vendor’s ability to provide a clear description of the proposed solution, technical merit of the response and total project risk. The proposed project price, schedule, and intellectual property rights assertions will be considered as aspects of the entire response when weighing risk and reward

6.1.1 The Government will evaluate the degree to which the submission provides a thorough, flexible, and sound approach in response to the ability to fulfill the requirements.
6.1.2 Phase I - Individual responses will be evaluated with consideration given to the overall technical merit of the response and the total project risk with consideration aimed at the RFS areas outlined above and the Focus Areas referenced below as well as the ability to fulfill the requirements in the AVTS Technical Supplement dated 21 August. The proposed project price, schedule, and intellectual property rights proposal/assertions will be considered as aspects of the entire response when weighing risk and reward.

6.1.3 The Solution Paper will be evaluated based upon the following focus areas, in no order of importance.

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<thead>
<tr>
<th>Focus Area</th>
<th>Focus Area Description</th>
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<tr>
<td>1</td>
<td>Cloud Technical and Computing Performance</td>
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<tr>
<td>2</td>
<td>Demonstrated Expertise</td>
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<tr>
<td>3</td>
<td>Solution Feasibility of Implementation, Technical Merit, Data Management</td>
</tr>
<tr>
<td>4</td>
<td>Product Cost / Data Rights</td>
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**Focus Area 1: Cloud Technical and Computing Performance**
- Readily containerized to compile and deploy application seamlessly.
- Address enterprise edge-to-cloud information pipe constraints by prioritizing data interchange between Enterprise Cloud and critical nature of business capability serviced.
- Support a scalable, immersive 3D modeling and simulation capability that minimizes latency.

**Focus Area 2: Demonstrated Expertise**
- Clearly communicate how past experience in creating Interactive Multimedia Instruction will demonstrate the technical capabilities of this effort.
- Communicate how past delivery distribution experience will be leveraged for the technical solution.

**Focus Area 3: Solution Feasibility of Implementation, Technical Merit, Data Management**
- Provide collaborative mode-based program and project management business capabilities to enhance a program’s ability to meet its business, schedule, quality, risk and technical requirements; associate objects to the program’s product structure; and provide configuration management as part of the system’s baseline.
- Use of an Software Development Lifecycle (SDLC) Methodology to rapidly deploy capability and requirements management
• Implement Human Centered Design (HCD) principles and incorporate user feedback throughout the SDLC.
• Clearly define Software Baseline Management and Test / Evaluation strategies
• Communicate schedule to include risks and dependencies to achieve an integrated AVTS minimum viable product (MVP) to support all objectives.
• Demonstrate an understanding of IA requirements.
• Enable use of multi-computing platforms (laptops, smart phone, tablets, etc.).
• Address Technical integration Risks as it relates to technology maturity and implementation.

Focus Area 4: Product Cost and Data Rights
• Identify critical risks to affordability and recommend readily implementable mitigation strategies
• Identify opportunities to minimize the manpower requirements
• Clearly identify the intellectual property rights being provided to the Government in terms of technical data, both in software and hardware, clearly outline any rights restrictions
• Provide a clear description of Commercial off-the-shelf (COTS) products being used in the solution.

6.1.4 Phase II – In the event that the Government finds two or more highly qualified solutions, a down-select will occur for the most qualified vendors to provide Solutions Presentations and to conduct Product Demonstrations. The Government reserves the right to request further substantiating documentation about existing capabilities in the proposed solution. The approach outlined in this section may evolve, as appropriate, to ensure the Government can most effectively determine the best solution.

6.1.4.1 Solution Presentations and Product Demonstrations are anticipated to be held between November 19th and November 21st 2019 - at the Government’s facility. Vendors selected to present and demonstrate their solution will be notified during the week prior and provided initial feedback to incorporate into their presentations/demonstrations. The Solutions Presentation will allow the vendor to further articulate its proposed solution, respond to discussion items provided prior to their Solutions Presentation, and answer further questions from the evaluation team. The demonstration phase should provide the Government the ability to see the capability proposed within your solution, as available in its current state, with the same opportunity to further articulate the solution and answer questions from the evaluation team.
6.1.5 The Government will award this OT prototype project through TReX, to the vendor whose solution is determined to be the most advantageous to the Government in terms of data rights, cost schedule, technical risks, and other factors considered. One or more OT agreements are anticipated to be awarded to accomplish the necessary work and select the best response(s) satisfying the focus areas stating in Section 6.1.4.

6.1.6 The Government reserves the right to award to a vendor that does not meet all of the requirements, but provides attributes or partial solutions of value.

7 Additional Information

7.1 Export Controls: Research findings and technology developments arising from the resulting project may constitute a significant enhancement to the national defense and to the economic vitality of the United States. As such, in the conduct of all work related to this effort, the recipient will comply strictly with the International Traffic in Arms Regulation (22 C.F.R. §§ 120-130), the National Industrial Security Program Operating Manual (DoD 5220.22-M) and the Department of Commerce Export Regulation (15 C.F.R. §§ 730-774).

7.2 Interaction and/or Disclosure with Foreign Country/Foreign National Personnel The contractor should comply with foreign disclosure processes IAW Army Regulation 380-10, Foreign Disclosure and Contacts with Foreign Representatives; the Department of the Navy Foreign Disclosure Manual, SECNAV M-5510.34, as of June 2017; Department of Defense Directive (DoDD) 5230.11, Disclosure of Classified Military Information to Foreign Governments and International Organizations; and DoDD 5230.20, Visits and Assignments of Foreign Nationals.

7.3 All submission shall be unclassified. Submissions containing data that is not to be disclosed to the public for any purpose or used by the Government except for evaluation purposes shall include the following sentences on the cover page:

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

8 Follow-On Production Upon a vendor’s successful completion of the prototype, the
   Government anticipates a follow-on production contract or transaction may be
   awarded to the vendor without additional competition. Successful completion will be
   defined in the negotiated Statement of Work (SOW) for this prototype project. Successful completion will occur when the prototype has been validated and is
   accepted by the Government

   Further, the government reserves the right to determine part or all of the prototype
   project is successfully completed if the vendor shows a particularly favorable or
   unexpected result justifying the transition to production.

9 Attachments
   Attachment 1, Technical Information Sheet AVTS System Spec Draft
   Attachment 2, Draft UH60V Training Support Packet
   Attachment 3, Security Process for Vetting Contractors
   Attachment 4, Department of Defense Instruction: Number 8510.01 (Risk
   Management Framework (RMF) for DoD Information Technology (IT))
   Attachment 5, DoD 8570.01-M Cyber Workforce Management Program
