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Integrated Cadet Administration Management and Information System
Performance Work Statement

1.0 GENERAL INFORMATION
The scope of work under this Performance Work Statement (PWS) for the procurement of the support service to operate, maintain, sustain, and perform minor upgrades for the Cadet Administration Management and Information System (CAMIS) for the United States Air Force Academy (USAFA) and United States Air Force Academy Preparatory School. The purpose of this effort is to provide on-site labor, expertise, and management to run CAMIS in support of all aspects of the USAFA mission. The Government shall not exercise any supervision or control over the contract service providers performing the services herein. Such contract service providers shall be accountable solely to the Contractor who, in turn is responsible to the Government.

USAFA is a military service academy with the primary mission of developing Second Lieutenants executed in a predictable, repeatable cycle called the "Cadet Lifecycle." In addition to conducting military and athletic training, USAFA provides its students with accredited undergraduate academic degrees. USAFA also runs a 1-year preparatory school for select students. The Academy has other academic and military tasks, including academic and institutional research, community outreach, and donor management. USAFA supports a customer base of approximately 4,500 students and 3,500 staff members.

CAMIS is the mission critical system used to manage cadet data in execution of the Academy mission. CAMIS originated as a mainframe application and has been modified, upgraded, and sustained over the course of approximately four decades. CAMIS is a custom developed web-based application using a predominantly Oracle product set and currently stores data from the first graduating cadet class of 1959 to the present day cadet classes. Although the CAMIS system has been maintained and sits on a modern platform, it has not gone through any major re-factoring; the database and applications remain in 1980s technology. Documentation regarding the specific design specifications is not available, although high-level architecture DOD Architecture Framework (DODAF) documentation and low level end-user guides and CAMIS Forms and Reports catalog are available. CAMIS is currently maintained by two different vendors, so the documentation may also be in different formats and level of detail based on the supporting contractor.

USAFA has presently acquired and is implementing a series of Commercial off-the-shelf (COTS) services hosted in a commercial cloud environment via separate contracting efforts to replace major functions in CAMIS. Stand up and implementation of these services is anticipated to take place over the course of approximately five years starting in January of 2018 with full operating capability on/about June 2022. These COTS services will be delivered in independent phases each with unique capabilities and functions. It is anticipated that these COTS services will replace CAMIS functions over time resulting in the retirement of CAMIS. During this transition period, USAFA requires that CAMIS continue to function to meet ongoing mission needs and support in migrating data from CAMIS to the new COTS functions.

1.1 PWS Organization. Section 1.0, General Information, provides information which applies to all sections of this PWS and Attachments. Section 2.0, Description of Services, provides specific requirements and is broken into three sub-sections: General, Operations, and Sustainment. Section 3.0, Services Summary (SS), includes service summary items for all requirements.

1.2 PWS Requirement. The Contractor shall provide all supervision, personnel, materials, and, software necessary to perform all tasks and functions as defined in this PWS and its attachments, with the exception of Government Furnished Resources (GFR) identified in each requirements section.

1.3 Period of Performance

      Base Year: 1 Feb 2019 to 31 Jan 2020
      Option Period 1: 1 Feb 2019 to 31 Jan 2021
      Option Period 2: 1 Feb 2021 to 31 Jan 2022
      Option Period 3: 1 Feb 2022 to 31 May 2022

1.4 Contractor Responsibilities/Support. The Contractor shall:
1.4.1. Be the single point of contact for all PWS requirements.
1.4.2. Interface with USAFA agencies and other contractors in performance of the PWS requirements.
1.4.3. Provide support to USAFA personnel and sponsored events.

1.4. USAFA Critical Activities. Mission Critical Event support activities are identified in Section 2.3. They are recurring, special interest, high visibility activities that require heightened management awareness and support. Contractor personnel shall:
1.4.1. Attend planning meetings as required by the Contracting Officer Representative (COR) in support of critical activities.
1.4.2. Provide CAMIS support Subject Matter Expertise (SME) for critical events
1.4.3. Provide after action reports on capabilities and issues as they relate to the critical events

1.5. Guidance/Instruction Changes. The Contractor shall notify the Government immediately of all guidance and instruction changes affecting the PWS requirements.

1.6. Contractor Generated Information.
1.6.1. All information generated and maintained under this contract, to include Government Furnished Information (GFI), shall be available for Government review upon request.
1.6.2. The Contractor concurs that any information collected as a result of efforts under the contract is the property of the US Government and shall not be released either formally or informally without the consent of the Government.
1.6.3. Any Contractor produced documentation that could be considered Government official records shall be maintained IAW Air Force Instruction (AFI) 33-322, *Records Management Program* paragraph 1.1.5, and the AF Records Management System.

1.7. Core Hours of Operation. USAFA core operating hours are generally Monday through Friday, 0730-1630, unless different hours are specified in section 2.0 Description of Services, in particular the critical activities described in section 2.3.
1.7.1. Federal Holidays**.** The following Federal Holidays are normally observed by this installation, but may not always be observed by the Contractor due to mission requirements. Occasionally class will be held on a Federal Holiday due to scheduling constraints.
      a. New Year's Day, January 1st or the Friday preceding or Monday following
      b. Martin Luther King's Birthday, 3rd Monday in January
      c. President's Day, 3rd Monday in February
      d. Memorial Day, Last Monday in May
      e. Independence Day, July 4th or the Friday preceding or Monday following
      f. Labor Day, 1st Monday in September
      g. Columbus Day, 2nd Monday in October
      h. Veteran's Day, November 11th or the Friday preceding or Monday following
      i. Thanksgiving Day, 4th Thursday in November

j. Christmas Day, December 25th or the Friday preceding or Monday following

1.8. Place of Performance. The primary place of performance USAFA CO 80840. Work is required to be performed on site in order to be co-located with the equipment. The contractor shall attend various meetings and conduct training at other facilities on the USAFA campus.

1.9. Adverse Weather Conditions.   Delayed-reporting or early release (for Government employees) does not necessarily constitute cancellation of requirements or relieve the Contractor of PWS performance.

1.10. Performance of Services During a Base Closure. Though the services performed under this PWS are not considered mission essential, the Contractor may still be required to perform PWS services during a base closure. The COR will notify the Contractor should PWS services be required during base closure and identify the required services.

1.11. Contractor Transition. The Contractor shall accomplish a transition as indicated in the following sub-paragraphs.
1.11.1. Phase-in Transition Plan. The contractor shall coordinate with outgoing contractors to ensure seamless transition of CAMIS services not to exceed 30 days. Contractor shall be in full compliance with PWS services after the phase-in period.
1.11.2. Phase-out Transition Period**.** If a phase-out transition period is implemented, the Contractor shall be fully responsible for operation of services as outlined in the PWS. The contractor shall coordinate with incoming contractor to ensure seamless transition of CAMIS services not to exceed 30 days.
1.11.3. Transition Documentation. The contractor shall ensure all system engineering & configuration information is up-to-date and complete to facilitate smooth transition of information and operations to the follow-on contractor.

1.12   Work Environment. USAFA missions are frequently interrupted by base exercises or actual ongoing base security events. The Contractor is required to participate in all exercises, which may include: fire drills, active shooter lockdowns, etc.   Priority outages take precedence over base exercises.

1.13   Quality Control Plan. The Contractor shall establish a written Quality Control Plan (QCP) to ensure the requirements of the contract are provided IAW with the PWS. The Contractor shall submit the QCP to the COR and CO within 30 days of contract award for review. The QCP shall remain in effect during the term of the contract (including any option periods, if exercised). The QCP shall at minimum address compliance in the areas identified in Services Summary (SS), and contain the following:
1.13.1   The Contractor shall develop and maintain a QCP inspection plan that encompasses all functions of the contract.
1.13.2   The Contractor shall develop and maintain a QCP ensuring contract performance IAW the PWS. Personnel performing the quality control (QC) function shall have sufficient, well-defined responsibility, authority, and the organizational freedom to identify and evaluate quality problems and to initiate, recommend, or provide solutions.
1.13.3   The Contractor shall maintain adequate records of all audits and inspections. Quality assurance (QA) records shall indicate the nature and number of observations made, number and type of deficiencies found and the nature of corrective action taken as appropriate.
1.13.4   Quality Status Reports (QSR) shall be generated on a monthly basis by the contractor. Details of audits and inspections accomplished, significant deficiencies noted, trend analysis of contractor's performance and current status of all issues yet to be resolved shall be provided. QSRs shall be distributed monthly to the Contractor's program management and Government representatives concurrently. At a

minimum, the QSRs must include metrics which verify whether the performance standards in the Service Summary have been met.

1.13.5   The contractor's QC function shall ensure that timely and effective corrective action is obtained for all deficiencies identified by the Government. All deficiency responses shall include identification of the cause of the deficiency to preclude recurrence and an analysis of the quality program's effectiveness in the area of the deficiency.

1.13.6   The contractor's QC function shall develop and maintain a training program designed to ensure all Contractor personnel are clearly aware of the contractual requirements and are current with any changes throughout the life of the contract.

1.13.7   The Contractor shall notify the on-site COR in writing of any changes to their Quality Control Plan. The contractor shall make revisions at no additional cost to the Government.

1.14 Contractor Personnel.

1.14.1   Availability**.** During core operating hours, a contractor representative shall be available within one (1) hour to meet on the installation with Government personnel to discuss important program issues. This person should be appointed in writing at the start of this contract.

1.14.2   Authorized Contractor Personnel Listing**.** The contractor, no later than the pre-performance conference, shall provide the COR a roster of all employees working under the PWS requiring government network access. Subsequent changes to these rosters shall be submitted to the COR.

1.14.3   Contractor Personnel Identification**.** Contractor employees shall wear a Government issued badge at all times to identify themselves as a contractor. Contractor employees shall identify themselves as being a contractor when attending meetings, answering Government telephones, and working in other situations where their Contractor status is not obvious to third parties (e.g., clients, vendors, customers, public contacts, etc.) to avoid creating an impression that they are Government officials. The Contractor shall also ensure that all documents or reports produced by the Contractor are suitably marked as contractor products or that contractor participation is appropriately disclosed.

1.14.4   Image of Contractor Personnel**.** Contractor personnel shall present a neat and professional appearance.

1.14.5   Removal of Contractor Personnel. The government reserves the right to direct the removal of any contractor employee for misconduct or security reasons from working on any aspect of the program. This action does not relieve the contractor from total performance of the program tasks specified herein.

1.14.6   Hiring of U.S. Government Employees**.** The Contractor shall not employ any person who is an employee of the US Government if employing that person would create a conflict of interest, or the appearance of a conflict of interest. The Contractor shall comply with the Joint Ethics Regulation (JER), which can be found at http://www.dod.gov/dodgc/defense_ethics/ethics_regulation/, in regard to the employment of current and/or former Government employees. Additionally, the Contractor shall not employ any person who is an employee of the Department of the Air Force, either military or civilian, unless such person seeks and receives proper approval. The Contractor shall not employ any person who is an employee of the Department of the Air Force if such employment would be contrary to the policies in AFI 64-106 *Air Force Industrial Labor Relations Activities* paragraph 3. The Contractor is prohibited from employing off-duty Government COR(s) who are managing any contracts or subcontracts awarded to the Contractor. The abrupt absence of any Contractor personnel does not at any time constitute an excuse for nonperformance under this contract.

1.15   **Maintaining Clean Work Areas.** The Contractor shall ensure all work areas assigned under the PWS are maintained in a neat and clean manner at all times and immediately report any facility and safety discrepancies to the Government.

1.16   **Contractor Manpower Reporting for Contract Performance Work Statements.** The Contractor shall report ALL contract labor hours (including subcontractor labor hours) required for

performance of services provided under this contract for the U.S. Air Force. The Contractor shall fill in all required data fields at https://afcmra.dmdc.osd.mil.

1.16.1   Reporting inputs shall be for the labor executed during the period of performance during each Government fiscal year (FY), which runs 1 October through 30 September. While inputs may be reported any time during the FY, all data shall be reported no later than 31 October of each calendar year. Contractors may direct questions to the CMRA help desk.

1.16.2   Uses and Safeguarding of Information. Information from the secure web site is considered to be proprietary in nature when the contract number and Contractor identity are associated with the direct labor hours and direct labor dollars. At no time will any data be released to the public with the Contractor name and contract number associated with the data. User manuals for Government personnel and Contractors are available at the CMRA link at http://www.ecmra.mil.

1.17   Incident/Mishap Reporting. In the event of a safety incident/mishap, the Contractor shall take reasonable and prudent action to establish control of the scene, prevent further damage to persons or property and preserve evidence until released by the investigative authority. Immediately report the incident to the COR and the USAFA Safety Office. If the Government elects to conduct an investigation, the Contractor shall cooperate fully and assist Government personnel until completed.

1.18   Base Access Requirements.   The contractor shall obtain base identification and vehicle passes, if required, for all contractor personnel who make frequent visits to or perform work on the Air Force installation(s) cited in the contract.

1.18.1   Contractor personnel are required to wear or prominently display installation identification badges or contractor-furnished, contractor identification badges while visiting or performing work on the installation.

1.18.2   The contractor shall   submit a written request on company letterhead to the contracting officer listing the following: contract number, location of work site, start and stop dates, and names of employees and subcontractor employees needing access to the base. The letter will also specify the individual(s) authorized to sign for a request for base identification credentials or vehicle passes. The contracting officer will endorse the request and forward it to the issuing base pass and registration office or Security Forces for processing. When reporting to the registration office, the authorized contractor individual(s) should provide a valid driver's license, current vehicle registration, and valid vehicle insurance certificate to obtain a vehicle pass.

1.18.3   During performance of the contract, the contractor shall be responsible for obtaining required identification for newly assigned personnel and for prompt return of credentials and vehicle passes for any employee who no longer requires access to the work site.

1.18.4   When work under this contract requires unescorted entry to controlled or restricted areas, the contractor shall comply with AFI 31-101, Integrated Defense paragraph 2.4.3.1., and DoDM 5200.02_AFMAN 16-1405 *AF Personnel Security Program*, paragraph 3.3.

1.18.5   Failure to comply with these requirements may result in withholding of final payment.

1.19   Network Access and Security Requirements. The Contractor shall comply with USAFA, Air Force and Department of Defense (DoD) security requirements during the performance of services under this PWS. Contractor Personnel utilizing unclassified automated information systems shall have an appropriate favorable Personal Security Investigation IAW DoDM 5200.02_AFMAN 16-1405 paragraph 3.3. The Contractor employee requiring access shall sign an AF Form 4394, Air Force User Agreement Statement – Notice and Consent Provision, and complete a DD Form 2875, System Authorization Access Request. The Government reserves the right to deny access to Government networks for personnel waiting on approval of favorable background checks. The Contractor shall enforce and adhere to DoD, AF and USAFA policies and procedures regarding the use and security of computer hardware and software systems and ensure that Contractor employees receive guidance/assistance on computer security

policies and procedures IAW AF and USAFA requirements AFI 17-130, *Air Force CyberSecurity Program Management* paragraph 4.1.6 and AFMAN 17-1201, *User Responsibilities and Guidance for Information Systems all paragraphs except 2.8., 4.5., 4.6., 4.7., 4.9., 4.10., and Chapter 5.*
1.19.1 The Contractor shall notify their local Client Service Technician (CST) when employees no longer require access to Government networks so that log-ins and e-mail accounts can be deleted. Common Access Cards and Proximity Badges must be turned into the COR prior to departure. All work on the Government networks is subject to monitoring without notification for the safety and security of all Government networks resources.

1.20   Contractor Provided Software and Hardware. The Contractor will be responsible for procuring software and hardware in government name required to operate and maintain CAMIS. Software shall be procured on a lowest-cost/best-value basis and will be reimbursed at cost. Discounts and rebates provided to the Contractor shall be passed to the Government. COR approval shall be obtained prior to purchase of any software. The Contractor shall obtain a minimum of three independent and competitive quotes for individual items in excess of $1,000. The Contractor shall provide all purchase documentation to the Government prior to COR acceptance of invoice for reimbursement. The Contractor shall maintain all licenses for Contractor-provided software connected to Government networks. When Contractor provided software is no longer required, the Contractor shall remove the software from both Government and Contractor computer systems connected to the Government networks.

1.21   Physical Security. The Contractor shall safeguard all Government property and any controlled forms or products. At the close of each work day/period, facilities, support equipment and materials shall be secured. The Contractor shall designate a custodian(s) and alternate(s) to receive and account for Government-furnished resources. Submit notification of designations to the Contraction Officer Representative. Contractor shall immediately report all thefts, vandalism or destruction of property and/or equipment (Government or Contractor owned) to the Security Forces upon discovery.
1.21.1 Key Control**.** The Contractor shall establish and implement methods of making sure all keys provided to the Contractor by the Government are not lost or misplaced and are not used by unauthorized persons. The Contractor shall not duplicate any keys issued by the Government. The Contractor shall immediately report to the COR any occurrences of lost, unauthorized uses or unauthorized duplication of keys, badges or lock combinations.
1.21.2 Distribution of Keys**.** The Contractor shall prohibit the use of keys issued by the Government by any persons other than the Contractor's employees and the opening of locked areas by Contractor employees to permit entrance of persons other than Contractor employees engaged in performance of contract work requirements in those areas.
1.21.3 Lock Combinations**.** The Contractor shall control access to all Government provided lock combinations to preclude unauthorized entry. The Contractor employees shall not record security containers, secure rooms or vaults combinations without written approval by the Government functional director. The Contractor shall not change combinations to security containers, secure rooms or vaults without written approval by the security officer and the Government functional director.
1.21.4 Corrective Action(s)**.** In the event keys, other than master keys, are lost or duplicated, the Contractor may be required, upon written direction of the CO, to rekey or replace the affected lock or locks without cost to the Government. The Government may, however, at its option, replace the affected lock or locks or perform rekeying and deduct the cost of such from the monthly payment due the Contractor. In the event a master key is lost or duplicated, all locks and keys for that system shall be replaced by the Government and the total cost deducted from the monthly payment due the Contractor.

1.22   Operations Security (OPSEC) Considerations. All information obtained and/or created under this contract shall not be released either formally or informally to anyone without the written consent of the COR.

1.23   Security Clearances. Security Clearances may be required as specified in each section of the PWS. The Contractor shall submit proof of clearance for applicable employees to the security manager representing the appropriate functional area. Security clearances shall be certified by the security manager representing the appropriate functional area prior to personnel performing work that requires a clearance. The cost to obtain and maintain security clearances for applicable Contractor personnel shall be the responsibility of the Contractor.

1.24   Security of Computer Hardware and Software Systems The contractor shall adhere to AFI 17-130, Cybersecurity Program Management, paragraph 4.2.5 for auditing, training and implementation of cybersecurity throughout all phases of a system and/or application. The contractor shall ensure their personnel have a record of their USAFA Network User License Agreement (NULA) and ensure personnel comply with the policies and procedures regarding the proper use and security of computer hardware and software systems. The contractor shall notify the COR when employees no longer require access to the USAFA.edu network; so that log-ins and e-mail accounts can be deleted.

1.25   The contractor shall provide all necessary host security administration and security process documentation IAW AFI 17-130, Cybersecurity Program Management, Sections 3 and 4. The contractor shall ensure cybersecurity controls are applied to the systems and applications and tested to established Security Technical Implementation Guides (STIGs), NSA Security Checklists, US Cyber Command Information Assurance Vulnerability Alerts (IAVAs) and Cyber Tasking Orders (CTOs). Server operating systems (servers) and client operating systems shall be maintained and security vulnerabilities patched by the contractor to versions that are directed by the STIG/IAVA/CTOs and are supported by the manufacturer, and IAW AFI 17-130, paragraph 4.4.2. The contractor shall resolve all Category 1 (CAT I) vulnerabilities within 30 days and Category 2 (CAT II) vulnerabilities within 45 days (or within an approved Plan of Action and Milestones (POA&M) in accordance with DOD directed timelines and shall ensure systems remain free of all CAT I vulnerabilities as described in DoDI 8510.01, Enclosure 6, paragraph 2. The contractor shall be responsible for all Server Operating System configurations with the exception of configurations managed by the 10th Communications Squadron (10 CS) as prescribed by the Service Level Agreement (SLA) between 10 CS and the CAMIS PMO. The service provided shall be proficient in security vulnerabilities detection and remediation. The contractor shall report all vulnerabilities to the government when discovered and provide a recommended corrective action strategy.

1.26   Security of Data and Information The contractor shall ensure that all individually identifiable data be handled and disposed of IAW the Privacy Act of 1974 as amended. The contractor shall comply with security safeguards and access to Health Insurance Portability and Accountability Act (HIPPA) per the HIPPA Act of 1996 or as amended and per DODI 6025.18P, DoD Health Information Privacy Regulation. The contractor shall ensure data and information handling and security comply with DoD 5400.11-R, Department of Defense Privacy Program, sections C1.3, C1.4, C1.5, Chapter 2, C3.1, C3.2, C3.3, Chapter 4, C9.2.2, C10.4 (for violations), C10.6, C11.1.2 (exceptions), C11.3.2.11, AP1.3, AP1.4, AP1.5, AP1.6, AP1.7, AP3, and AP4 and AFI 33-332, Privacy Act Program, sections 10.1 and 10.2.

1.27   Communications Security (COMSEC). Contractor employees shall complete government provided COMSEC training and comply with COMSEC user requirements IAW AFI 33-200, Information Assurance Management, section 3.19, AFI 33-201, Volume 1, Communications Security (COMSEC) and Volume 2, Communications Security (COMSEC) User Requirements.

1.28   Data Rights and Non-Commercial Computer Software. In accordance with the contract clauses, the Government has unlimited rights to all data and deliverables created in performance of this contract (e.g. designs, associated code and/or executable code, documentation and affiliated work products). The Government will retain custody of all records (hard and soft copies) associated with Contractor management and shall have exclusive control in the distribution of all deliverables and products.

1.29   Contractor Provided Software.   The contractor shall obtain approval from the CAMIS Program Manager and USAFA Authorization Official prior to purchasing software for computers that are connected to the USAFA network. The contractor shall maintain all licenses for contractor software connected to the USAFA network IAW AFMAN 17-1203, IT Asset Management, Chapter 3. When software use is no longer required, the contractor shall remove the software from both government and contractor provided computer systems connected to the USAFA network.

1.30   Proprietary Deliverables. The contractor shall not provide the government deliverables marked as "proprietary" for any deliverable associated with this PWS. All software code, data, and information generated in support of this PWS is the property of the US government, without exception.

1.31   Government Furnished Resources. The Government will provide Government furnished resources as outlined in the PWS sections below.

1.31.1   Government Furnished Facilities. The Government will provide desk space for contractor personnel. The Government retains the authority to modify or realign facilities and space provided to the Contractor based on current AF guidelines for space utilization, mission and personnel requirements of the Contractor. All facilities and personnel shall only be used in performance of this contract. The Contractor shall return the facilities to the Government in the same condition as received less fair wear and tear and approved modifications.

1.31.2   Government Provided Assets. The Government will furnish or make available working space, network access, and equipment to include

- CAMIS Hardware/Software System Infrastructure
- Windows PC with Microsoft Office Suite (Outlook, Word, Excel, PowerPoint, etc.)
- Telephone (local/long distance calls authorized as dictated by Contract performance requirements)
- Facsimile, Copier, Printer
- Office supplies

All materials will remain the property of the Government and will be returned to the responsible Government party upon request or at the end of the Contract period of performance. Equipment purchased by the contractor with the approval of the Government and directly charged to this Contract shall be considered government owned-contractor operated equipment. The contractor shall conduct a joint inventory and turn in this equipment to the COR upon request or completion of the Contract.

1.31.3   Reports of Survey. The Contractor shall be required to provide information to a Government employee should a Report of Survey be required to investigate missing asset(s).

1.31.4   Government-furnished Furniture. Office/shop furniture may be made available to the Contractor as specified in each applicable section. Removal of any furniture shall be coordinated with the COR and turned in to Base Supply.

1.31.5   Government-furnished Utilities. The Government will furnish utilities on the installation. The Contractor shall make sure employees practice utility conservation and operate under conditions that prevent the waste of utilities.

1.31.6 Network Access. The Government will provide "Official Use Only" network Internet/intranet access through the Government network for approved systems and workstations required for accomplishment of work in support of this PWS. Network access for Contractor employees requires a Common Access Card (CAC) provided by the Government.

1.31.7 Custodial Services. The Government will provide custodial services for occupied Government-provided facilities at the same level provided to Government employees. All other services shall be the responsibility of the Contractor.

1.31.8 Refuse Collection. The Government will make available refuse collection and disposal services for the Contractor at Government expense in direct support of the PWS. Emptying of individual trash receptacles into Government-provided dumpsters is the responsibility of Contractor employees. Dumpsters are available for Contractor use for the disposal of items. The Contractor shall follow guidelines established by the base regarding proper disposal of refuse. The Contractor shall not dump prohibited items in dumpsters. The Contractor shall comply with all base-recycling programs.

1.31.9 Telephone Services. The Government will provide local and Defense Switched Network (DSN) telephone service. The Government will provide all maintenance service on Government-provided phone lines and instruments and will relocate subject service when the relocation is approved by the Government. Government provided telephone service shall be used for official calls necessary in the performance of the PWS. All commercial long distance expenses shall be the Contractor's responsibility. The Lead COR, at his/her discretion, may grant certain Contractor personnel access to Government long distance service. Otherwise, the Contractor shall provide his or her own non-Government telephone service through off-base switching equipment for personal or unofficial business.

1.31.10 Contractor Owned Equipment Storage. The Contractor may coordinate with 10 CES for space in the contractor storage yard for the storage of contractor owned equipment, if applicable.

1.31.11 Contactor Furnished Property and Services. Except for those items or services specifically stated elsewhere in the PWS and appendices, the contractor shall furnish everything needed to perform the PWS according to all its terms. The following mentioned requirements are not all inclusive of the contractor furnished items and services required in the performance of the PWS.

1.32   Reimbursable Materials and Equipment. The Contractor shall ensure all software and hardware licensing and warranty agreements are maintained in good standing. The contractor shall source materials based on lowest-cost/best-value for the Government. Materials and equipment will be reimbursed at cost. Discounts and rebates provided to the Contractor shall be passed to the Government. The Contractor shall obtain written COR approval prior to purchase.

1.32.1 Hardware/Software Purchases. The contractor shall purchase on behalf of the Government hardware and software items in support of CAMIS operations per the Government-provided technical specifications. All hardware and software purchased are the property of the Government and shall remain in the Government's possession following contract completion. A list of current utilized software and hardware to include warranty status is at Appendix 6.

1.32.2 Software, Hardware, and License Management. The contractor will use existing tracking tools to track, monitor, and report on software and hardware support and license identifying information including: quantities, expiration, and renewal information. The contractor shall support common practices for ordering assets, tracking orders and assets, and tagging the assets. The contractor shall support application installation, operations, upgrades, customer support, training, maintenance, sustainment, and configuration control.

1.33   Facility Management. The contractor shall function as the building custodian for Building 5130. Duties include identifying, reporting, and tracking building maintenance functions and repair requests. The contractor shall manage building access and access to controlled areas.   The Contractor shall designate in writing Primary and Alternate Facility Managers, and perform facility management duties IAW USAFAI 32-2001, Fire Prevention Practices and Fire Protection Engineering Standards

paragraph 2.4 – 2.8, and local procedures (CES Customer Service Handbook). The Contractor shall immediately report all thefts, vandalism, or destruction of property and/or equipment (Government or Contractor owned) to the 10th Security Forces and COR upon discovery. Repair/maintenance issues, if any, will be reported at the bi-weekly PMR. The contractor shall develop procedures covering all means of entry to government building/facility access control and be included in the QCP. Such procedures shall include turn-in of any issued keys and badges as well as combination changes. The contractor shall immediately report to the COR or CO any occurrences of lost, unauthorized uses, or unauthorized duplication of keys, badges or lock combinations. In the event keys or badges are lost or duplicated, the contractor may be required, upon written direction of the CO to re-key or replace the affected lock(s) or badges. Coordination for any combination changes shall be made through the facility manager. The government may, at its option, replace the affected lock(s), badges or perform re-keying and deduct the cost of such from the monthly payment due to the service provider.

1.34   Information Technology Equipment Management: The contractor shall assign and perform the duties of the IT Equipment Custodian (ITEC) for the government furnished IT assets utilized by the PMO. Actions will be performed in accordance with AFI 17-1203, *Information Technology Asset Management* paragraph 1.2.14.

1.35   Miscellaneous & Ancillary Training. Contractor personnel shall accomplish initial and annual Government provided Computer Based Training to include: Information Assurance/Cyber Awareness Challenge, Protecting Sensitive Information, Anti- terrorism, OPSEC, Contractor Safety, Records Management, HIPPA, Privacy Act and other training as identified and provided by the Government.

2.0 DESCRIPTION OF SERVICES

The overall intent of this PWS is for the contractor to provide uninterrupted CAMIS service delivery in support of the Cadet Lifecycle activities and events and complete Service and Change Requests (SRs and CRs) in software release cycle agreements. CAMIS is a tiered client-server architecture that runs within the USAFA Campus Area Network (CAN) (a.k.a., USAFA.EDU). Other than exchanges to external systems, CAMIS is not accessible from the NIPRNET, SIPRNET, Defense Research & Engineering Network (DREN), or the Internet. USAFA.EDU is also not a part of the NIPRNET.

CAMIS is made up of nine (9) databases and 71 applications/high level functions, including one large application, the Cadet Logistics and Supply System (CLASS). The CAMIS currently runs on a virtualized Cisco hardware platform, using RedHat Linux 6.0 with 7.0 operating system, and the databases run on Oracle 12c. Special algorithm processing is performed by a third party software application called Xpress-MP, which is used for linear programming optimization tasks such as scheduling cadet classes and cadet squadron assignments. Detailed system characteristics for CAMIS and CLASS are included in Appendix 1, Architectures.

CAMIS has separate production, and pre-production environments. The production environment includes both primary and a warm Continuity of Operations (COOP) systems that are geographically separated on the Academy between building 5130 on south-side of Academy and Fairchild Hall on the north-side of the Academy. The pre-production environment consist of developmental ("Dev") and Test Systems. The current system is divided into CAMIS Modernization and CAMIS Legacy. This contract will support both as a single system. The high level architecture is shown in the diagram below:
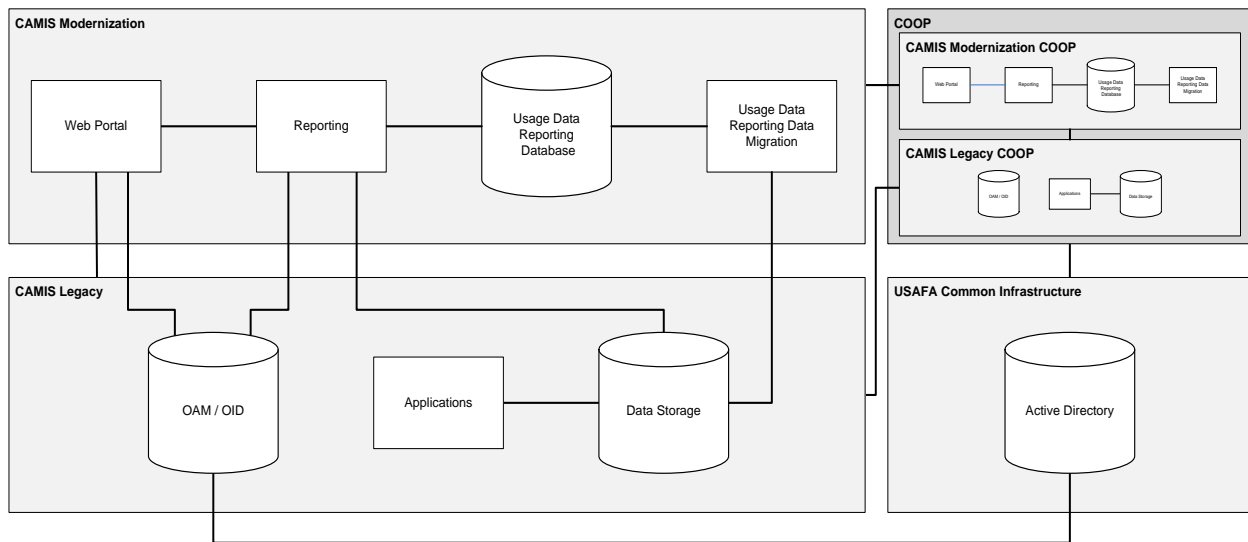
- Diagram depicts only the most important internal CAMIS Modernization interfaces
- Various Legacy CAMIS interfaces are shown for context

The details of the actual system can be found in the attached appendices, but a high level overview is Oracle WebCenter provides a front-end to access CAMIS (to include the CLASS system), Oracle Access Manager/Oracle Identity Manager provides authentication through SSO validated from the on premise Active Directory (2017) system. The Active Directory is managed by the local Communications Squadron. Reporting is provided using Oracle Business Intelligence Enterprise Edition (replacing most of the previous legacy Oracle Discover Reports). The applications are supported using the latest 12c Oracle Forms and Reports and WebLogic. The CLASS system was originally developed in JAVA and was recently converted to Oracle Forms and Reports and uses WebCenter and portlet technology. Many of the details of the scope of the application are specified in the CAMIS Forms and Reports Catalog. The reporting functions have recently been converted from Discoverer to OBIEE. These systems are supported through both VMWare and Physical Servers running Red Hat Enterprise Edition and appropriate platform and middleware. The major duties and responsibilities are listed to provide vendor with guidance of expectations and the level of complexity of this system.

CAMIS originated as a mainframe application and has been modified, upgraded, and sustained over the course of approximately four decades. CAMIS is a custom developed web-based application using a predominantly Oracle product set and currently stores data from the first graduating cadet class of 1959 to the present day cadet classes. Although the CAMIS system has been maintained and sits on a modern platform, it has not gone through any major re-factoring; the database and applications remain in 1980s technology. Documentation regarding the specific design specifications is not available, although high-level architecture DODAF documentation and low level end-user guides and CAMIS Forms and Reports catalog are available. CAMIS is currently maintained by two different vendors, so the documentation may also be in different formats and level of detail based on the supporting contractor.

Many functions currently performed within CAMIS are being replaced with new COTS delivered capabilities. As part of the overall operations of CAMIS, the contractor will be expected to assist in extracting data in predefined formats to support transition, as well as decommissioning and/or modifying functions / interfaces in CAMIS to work with these new COTS systems. The purpose is to ensure the current functionality within CAMIS is preserved and continues to operate during the transition to COTS; it is not intended to add new functionality.

2.1. Service Operations. The contractor shall conduct service operations in order to deliver and manage CAMIS Services, including efficient and effective management of the underpinning technology used to deliver and support CAMIS services. The contractor shall manage all workload through Service Requests (SR) and Requests for Change (RFC) from end-users and customers

2.1.1. Technical Management. The contractor shall perform all IT Service technical management functions in order to ensure continued system operations.

2.1.1.1. Functional System Administration (FSA). The contractor shall be responsible for all aspects of systems administration in order to ensure a functional and efficient operational environment for production, pre-production, and development environments. The production environment includes both primary and warm (COOP) systems that are geographically separated on the Academy (Building 5130 and Fairchild). Systems administration shall include support for system operation and support to include analyzing, performance tuning, installing, maintaining and upgrading the operating system software, network components, virtual infrastructure, equipment and all hosted application software. The contractors performing FSA duties shall be certified and maintain an Information Assurance Technician (IAT) Level II or higher certification IAW AFMAN 17-1303, *Cybersecurity Workforce Improvement Program*, paragraph 3.2.1.2 and will possess and maintain a Secret security clearance. It is required that the at least one person on the team possess a certification as a VMware Certified Professional on vSphere 5 or have equivalent level of experience and that at least on person on the team is certified as a Red Hat Certified Engineer (RHCE) or have equivalent level of experience. These requirements are to meet the Computing Environment (CE) IAW AFMAN 17-1303 Chapter 3.

2.1.1.2. Database Administration (DBA). The contractor shall be responsible for managing three database: CAMIS Production Database, Preparatory School Production Database and the CAMIS History Database which contains data from the first class going back to 1954. The databases were developed as a hierarchical relational database schema in 1979 and the structure has not substantially changed since original development. The contractor shall be responsible for all aspects of Database Management Systems (DBMS) administration in order to ensure functional and efficient database operation. The contractor shall perform database integrity verification monthly to ensure that the database structure contains no anomalies. A database structure anomaly may also be encountered by application program processing. The contractor shall correct, upon detection, all instances of database structure degeneration and loss of data integrity. The contractor shall ensure corrective actions minimize customer impact and database downtime. The contractor will also need to assist in data migration to systems that will replace CAMIS. This will include assistance in mapping data fields and extracting required information from CAMIS. This will likely include multiple extracts to support replacement systems to include but not limited to: USAFA Student Information System (SIS), USAFA Data warehouse, and USAFA Cadet Logistics system. The contractors performing DBA duties shall be certified and maintain an Information Assurance Technician (IAT) Level II or higher certification IAW AFMAN 17-1303 paragraph 3.2.1.2. and will possess and maintain a Secret security clearance. It is required that the DBA be certified as an Oracle Database 12c Administrator Certified Professional or higher to meet the Computing Environment (CE) IAW AFMAN 17-1303, Chapter 3.

2.1.1.3. Middle Tier Administration. The contractor shall be responsible for all aspects of the Oracle mid-tier systems administration in order to ensure a functional and efficient operational environment for production, pre-production, and development environments of legacy CAMIS. The Mid-tier administration shall include support for system operation, Oracle mid-tier product suite to include Web Logic, Oracle WebCenter Portal, Oracle Forms and Reports, Oracle Web Server, Oracle Application server and other supporting components listed in the Appendices. This support to include analyzing, performance tuning, installing, maintaining and upgrading the operating system software, mid-tier

applications, and all hosted application software. The contractors performing middle tier administration duties shall be certified and maintain and maintain an Information Assurance Technician (IAT) Level II or higher certification IAW AFMAN 17-1303 paragraph 3.2.1.2, and will possess and maintain a Secret security clearance. The contractors performing these duties team shall be certified as an Oracle Unified Business Process Management Suite 12c Certified Implementation Specialist with Oracle Service Oriented Architecture and should have experience administering the Oracle Web Logic Server.

2.1.1.4. Supporting Application Administration. In addition to the core services provided by CAMIS, there are several products that provide supporting applications ancillary to the core services. These include but are not limited to DOORS Next Generation (DNG) Suite, Atlassian Jira, and Subversion. These applications the supporting platforms, operating systems, and hardware are considered part of the overall required administration. The vendor is also responsible for ensuring needed tools are present and maintained to support appropriate development and deployment operations e.g. Camtasia is used to support training videos for users. Tools provided by the previous contract are listed in the Appendices, but vendor may with COR approval replace or supplement these tools. These tools may also be used for efforts other cadet lifecycle mission systems, such as Blackboard LMS.

2.1.1.5. Cybersecurity Administration. The contractor shall ensure CAMIS maintains compliance with Risk Management Framework (RMF) Authorization and Assessment (A&A) process and maintains compliance with the Authority to Operate (ATO) at all times. This includes ensuring the needed technical security controls are implemented across the full CAMIS infrastructure to include but not limited to server and network equipment, operating systems and hypervisors, applications, and platforms. These activities will need to be coordinated with the Functional System, Database, and Mid-Tier administration to ensure coordination and uninterrupted services to the CAMIS end user community and contractor supported Development operations.
2.1.1.5.1. The contractor shall ensure CAMIS has zero non-mitigated Category 1 (Cat 1) and Category 2 (Cat 2) vulnerabilities, as defined in DODI 8510.01, para E2.56 (and sub paragraphs) and IAW DODI 8510.01, para 6.2.3.1.4 (and sub paragraphs). All security vulnerabilities shall be identified, tracked, and monitored at the monthly Program Management Reviews (PMRs). If a zero-day threat is identified, the contractor shall notify the COR within 30 minutes of identification.
2.1.1.5.2. Contractor shall ensure systems are properly configured IAW the Defense Information Systems Agency (DISA) Security Technical Implementation Guides (STIGs) at all times and are subject to random audit and inspection by USAFA and higher headquarters cybersecurity offices. The contractor shall conduct both manual and automated scans, using DISA-approved tools such as the Assured Compliance Assessment Solution (ACAS), on the network (firewalls, switches, and routers), servers, and client workstations. Additionally, the contractor shall run Fortify Application scanner on all software that is not on the Air Force Evaluated Products List. The contractor shall work with the network administrators to provide guidance for network security configurations, review audit logs, review firewall logs, and will review firewall rule sets (ports, protocols, and services) from a security perspective, using the DISA CAL and DISA Ports, Protocol and Services (PPS) Vulnerability Assessments, and give alternative recommendations as needed.
2.1.1.5.3. If there are deviations to AF policy and Cybersecurity Controls/ requirements, the contractor shall document the deviations and submit waivers to the government Information Systems Security Manager (ISSM) for Authorizing Official (AO) risk decision. The contractor shall will apply all security patches and update configurations IAW the DISA STIGs, Information Assurance Vulnerability Alerts/Memos (IAVA/Ms) and US Cyber Command Cyber Tasking Orders (CTOs) send out by the DREN Cyber Security Service Provider (CSSP) are accomplished. Operating System and IAVM patching is typically done on monthly basis; database and STIG patching are typically done on a quarterly basis.

2.1.1.5.4. The contractor shall develop or maintain all documentation required to support the RMF package. Although the final authorization recommendation package will be compiled by another contractor working for the ISSM, all supporting documentation and artifacts are the responsibility of this contractor.

2.1.1.5.5. The contractor shall ensure all system components remain patched with vendor software updates. The contractor shall follow industry bets practices of promoting software patches from development, to test, to production. All non-Category I patches shall be accomplished from time to release to deployment to production within 120 days.

2.1.1.5.6. The contractors performing cybersecurity administration duties shall be certified and maintain an Information Assurance Technician (IAT) Level II or higher certification IAW AFMAN 17-1303 paragraph 3.2.1.2. In additional the contractors performing these duties and will possess and maintain a Secret security clearance.

2.1.2. CAMIS Service Desk Operations. The contractor shall provide tier one through tier three technical support services for CAMIS end users and customers during core operating hours. The contractor shall use and maintain a ticketing system to prioritize and track Service Requests (SRs) and Requests for Change (RFCs). An SR is a user request for information, advice, access or a standard change to existing CAMIS services; RFCs are formal proposals to change, remove or add a new CAMIS service.. The contractor either use the government-provided ticketing system (currently Jira Service Desk) for service desk ticket tracking or they are authorized to provide their own system at contractor expense. The contractor shall provide all operations and sustainment tasks, including systems administration, for the service desk ticketing system in support of all CLC PMO users and functions. Average historical workload for Change Requests is shown in Appendix 3.

2.1.2.1. Service Desk Reporting. The contractor shall report on help desk metrics to the government program manager during the monthly PMRs. Helpdesk metrics shall include:
- First contact resolution of incidents (target 95%)
- Number of help desk tickets opened during reporting period by category
- Number of help desk tickets closed during reporting period by category
- Mode of communication with the help desk
- Name of organizations requesting support
- Types of support requested
-"Out of the ordinary" types or quantities of tickets

2.1.2.2. Access Management. The contractor shall create accounts for all authorized users and delete accounts when access is not long required or authorized. Access management will be executed in accordance with AFI 17-130, *Cybersecurity Program Management*, section 4.3 and is handled and logged as SRs through the Service Desk.

2.1.2.3. Incident Management. The contractor shall manage all incidents to include unplanned interruption to service or a reduction in the quality of service. Incident management is the process by which the contractor will handle all failures, questions or queries reported by users, technical staff or detected by automated tools. All incidents shall be handled and logged as Service Requests into the service desk ticketing tool. All incidents shall be categorized so that work can be prioritized.

2.1.2.4. The contractor shall implement end user change requests**.** The contractor shall follow a formal change request processes for all changes affecting CAMIS capabilities in production. The contractor shall be able to provide level of effort/time to implement and correlated throughput information based on submitted change requests (CRs) to plan and schedule software releases. Design results for all change requests shall be captured in release package documentation. Change Requests planned for release shall

be maintained in the CAMIS Master Schedule and performance shall be reported during the every other week PMRs.

2.1.3. Maintenance. The Contractor shall be responsible for the repair, testing, maintenance, and first look/operational checks of all Government owned equipment. Any hardware or software additions implemented during this contract by the Contractor shall be considered part of the system configuration and shall be maintained by the Contractor.

2.1.3.1. System Downtime**.** For all production capabilities, the contractor shall manage both scheduled and unscheduled down-time.

2.1.3.1.1. Scheduled downtime shall be limited to previously agreed-to maintenance window (currently Thursdays after 5:00 PM). Any scheduled downtime required during other times much be coordinated two weeks in advance. Scheduled downtime will not be approved during Periods of Non-Disruption (PONDs) just prior to USAFA Critical Events

2.1.3.1.2. Non-scheduled down time. Downtime must be limited to no more than 2 hours during the entire POND preceding a USAFA Critical Event and no more than 4 hours per month.

2.1.3.2. Performance Monitoring: The contractor shall provide performance metrics for the operational environments during the monthly PMRs. The performance metrics shall include:

- Up-time percent with detail on Unscheduled Downtime Events and Durations (overall and by device) – uptime target is 99.9%
- Central Processing Unit (CPU) Utilization - Number of hits (overall and by device) –target utilization should not exceed 10%
- Number of queries processed (overall and by device)
- System Responsiveness (how long it takes to provide requested content--overall, by page, and by device)
- Storage utilization metrics—target utilization should not exceed 30%

2.1.4. Backup and Recovery

2.1.4.1.1. Database File Management, Backup and Recovery: The contractor shall ensure a complete and incremental backup and recovery of applications/data according to the established schedule.

2.1.4.1.2. Corrective and Emergency Maintenance: When production processing is interrupted by a hardware and/or host software malfunction, the contractor shall respond and begin troubleshooting diagnosis/corrective/emergency actions as prescribed in the following table:

Action	Normal Operations	Mission Critical Even Periods
Support Window	Core Duty Hours	24/7
Begin Response to outage	Within 15 minutes of identification during Core Duty Hours	Within 15 minutes of identification of outage
Notify government PM	Within 30 minutes of identification of outage	
Two Hour Outage window	If, during troubleshooting diagnosis, downtime is determined to be greater than two (2) hours, the PM and COR shall be notified of the necessity, reason for the downtime and be given an estimated time for restoration of services.	

2.1.4.1.3. The contractor shall execute database recovery actions including the use of database and file backups in conjunction with journaling, audit trails or similar files, as needed. The contractor shall begin database recovery within 30 minutes following the correction of a database failure during core operating hours or anytime in support of critical events listed in paragraph 2.3.   Information regarding Corrective and Emergency Maintenance shall be reported during the monthly PMRs.

2.1.4.1.4. The contractor shall provide an After Action Report for all Emergency Maintenance events. The report shall capture Root Cause/Corrective Action information.

2.2. Data Exchange and Interface Operations for External Mission Systems. The contractor shall maintain the following data exchanges and interfaces with the following systems:

2.2.1. Data exchange with USAFA Admissions System. The contractor shall provide integration support of CAMIS data with USAFA's current custom-developed and future commercial admissions system, currently Admission Liaison Officer Admissions System (ALOWeb/AMSYS). The admissions system currently in use at USAFA is operated and maintained by the USAFA Admission Office. Operations and maintenance of the admissions system is not within the scope of this contract. It is anticipated that ALOWeb/AMSYS will be decommissioned during the period of performance of this contract and replaced by the USAFA Student Information System (SIS)

2.2.2. Data exchange with USAFA Registrar Systems The contractor shall provide integration support of CAMIS data with USAFA's current custom-developed Registrar system known as "Q2" and "RIOS". The Registrar system currently in use at USAFA is operated and maintained by the USAFA Registrar's Office. Operations and maintenance of the Registrar systems are not within the scope of this contract. It is anticipated that these systems will be decommissioned during the period of performance of this contract and replaced by the USAFA Student Information System (SIS)

2.2.3. Data exchange with USAFA Learning Management System (LMS). The contractor shall provide integration support of CAMIS data with USAFA's LMS (currently Blackboard). This will include integration/data exchange of CAMIS with current LMS, Blackboard, or future commercial LMS systems. Support is a manual process using flat file Comma Separated Value (CSV) exports/imports or automated integration through open standard interfaces. The Blackboard LMS is currently available to all USAFA personnel via a separate contract managed by HQ AETC with functional administration and consulting on another contract managed by USAFA/A6. Appropriate access to the Blackboard LMS will be provided. Operations and maintenance of the LMS is not within the scope of this contract. It is anticipated that this interface will be decommissioned as the new USAFA SIS will integrate with Blackboard at some point during this contract.

2.2.4. Data exchange with USAFA Student Information System (SIS). The contractor shall coordinate CAMIS O&S efforts with the PMO staff to ensure ongoing functionality during USAFA's transition to a commercial SIS service. The contractor shall support concurrent operations and data exchange with USAFA's future SIS currently targeted for IOC Fall 2018 and FOC Fall 2019. Contractor shall support the SIS implementation team with information, data, and CAMIS expertise as directed by PMO staff. Contractor will participate in ad-hoc technical exchange meetings estimated to be once per week. Contractor will be prepared to "deprecate" or disable portions of CAMIS functionality throughout the SIS implementation process.   NOTE: It is anticipated that current CAMIS applications will continue to operate in whole or in part throughout the future-SIS transition period and until the end of the period of performance for this contract. USAFA SIS implementation and sustainment are being performed via a separate contract. Configuration, implementation, operations and maintenance on the future commercial SIS is not within the scope of this contract. The contractor shall assist the government and the USAFA SIS contractor with data migration from CAMIS to the new SIS.

2.2.5. Data exchange with USAFA portion of the Human Resource Management (HRM) Data Warehouse (DW). The contractor shall coordinate CAMIS O&S efforts with the PMO staff to ensure ongoing functionality during USAFA's transition to an AF enterprise HRM data warehouse. The contractor shall support concurrent operations and data exchange with USAFA's future DW currently in pilot and supported through HQ USAF/A1X. This system is currently hosted in AWS GovCloud and uses red-shift and other BI tools. Contractor shall support the USAFA DW implementation team with information, data, and CAMIS expertise as directed by PMO staff. Contractor will participate in ad-hoc technical exchange meetings estimated to be once per week.   Contractor will be prepared to "deprecate" and/or disable portions of CAMIS functionality throughout the DW implementation process.   NOTE: It is anticipated that current CAMIS applications will continue to operate in whole or in part throughout the future-DW transition period and until the end of the period of performance for this contract. The commercial DW is being pursued by USAFA via a separate contract under HQ USAF/A1X. Configuration, implementation, operations and maintenance on the future commercial DW is not within the scope of this contract. The contractor shall assist the government and the Data Warehouse contractor with data migration from CAMIS to the new Data Warehouse.

2.2.6. Data exchange with Defense Property Accountability System (DPAS). The contractor shall coordinate CAMIS O&S efforts with the PMO staff to ensure ongoing functionality during USAFA's transition to DPAS which is a Government off the Shelf (GOTS) system managed by the Defense Logistics Agency (DLA). The contractor shall support concurrent operations and data exchange from CAMIS to DPAS. Contractor shall support the DPAS implementation team with information, data, and CAMIS expertise as directed by PMO staff. Contractor will participate in ad-hoc technical exchange meetings estimated to be once per week.   Contractor will be prepared to "deprecate" and/or disable portions of CAMIS functionality throughout the DPAS implementation process.

2.2.7. It is anticipated that current CAMIS applications will continue to operate in whole or in part throughout the future-CLS transition period and until the end of the period of performance for this contract. Configuration, implementation, operations and maintenance on the future commercial CLS is not within the scope of this contract. However, assistance with data integration is within the scope of this contract.

2.2.8. Data exchange with systems identified in DODAF Artifacts.   CAMIS includes several "interfaces" with external systems identified in its current DODAF architecture system view-points. (SV-1, etc.). This functionality shall be maintained and in cases where replaced by future systems deprecated to ensure accurate exchanges of information. Most interfaces are manual or semi-automated (reports). Contractor will be prepared to "deprecate" and/or disable portions of CAMIS functionality throughout the contract.

2.3. Mission Critical Event Support. The contractor shall provide O&S services in support of USAFA mission critical events listed in GFI. These events are special interest, high visibility items for the USAFA; therefore, they require heightened management awareness and support. The contractor shall be available twenty-four (24) hours a day to diagnose and resolve system or application problems for all critical processing during the timeframe of Cadet Graduation and Cadet In-processing highlighted below. Short turn data exchanges between USAFA mission systems will be required for most critical events as detailed in paragraph 2.2.5. The contractor shall incorporate lessons learned in an after action report to improve future critical processing. USAFA critical events requiring CAMIS support is listed below.

2.3.1. Event Planning Support**.** Contractor personnel shall be required to attend planning meetings, provide SME review and comments concerning C-E support, coordinate with PMs, and provide after action reports for supported events

2.3.2. Cadet Graduation: As a USAFA Major Event, the contractor shall ensure the system can support graduation/out-processing of all graduating cadets in less than 12 hours. Out-processing includes equipment turn in via the CAMIS CLASS application.

2.3.3. Cadet In-Processing: As a USAFA Major Event, the contractor shall ensure the system can support in-processing all incoming freshmen in less than 12 hours. Past incoming classes were approximately ~1300 cadets. In- processing typically begins at 7:00 AM and ends at 9:00 PM Mountain Time. Short turn data exchanges between USAFA systems (ALOWeb, CAMIS, Q2/RIOS and LMS) are required to ensure appointees are in-processed and ready to attend Basic Cadet Training.

2.3.4. Fourth Class Placement: The contractor shall provide several short turn data exchanges between CAMIS, Q2/RIOS and LMS required to ensure newly in-processed freshmen cadets (i.e. 4th class cadets) are scheduled into courses at the start of the fall semester.

2.3.5. End of Semester Support: The contractor shall ensure prompt support for final grade assignments, OPA, GPA, MPA, PEA and close out.

2.4. Service Design and Transition Management. The contractor shall manage the design of new or changes services and ensure they are thoroughly tested prior to transition to service operations.

2.4.1. Development Operations. CAMIS was initially developed in 1979 as a mainframe system. Although it was upgraded to a client-server architecture in 2002 and completed version upgrade in 2018, the database and application design have not changed substantially since 1979.   Although system functionality has been added, the overall application and data-base has not undergone a major refactoring effort and documentation of the legacy application to the source code / design level does not exists. The vendor will be expected to assume maintenance and perform upgrades to this legacy code and its supporting platform.

2.4.1.1. Commercial Version Upgrades. The contractor shall continue to maintain currency with commercially supported products. CAMIS was recently upgraded to a virtualized hardware environment in along with software upgrades to Red Hat Enterprise Linux Operating System 6.0 and Oracle 12c database in order to maintain currency with commercially supported products. At this time, another significant version upgrade is not anticipated. However, changes in the commercial environment could dictate future upgrades and regular patching and maintenance of these systems are required.

2.4.1.2. Software Development. The contractor shall execute software development activities to implement changes to the CAMIS database and/or applications based on end-user requirements**.** Customer Requests for Change that drive a Baseline Change Request (BCR) require software development. BCRs are an enhancement of an existing function or application and typically require some minor developmental modernization effort. Since CAMIS is a legacy system scheduled for replacement and retirement, BCR workload will be kept to a minimum, focusing only on critical changes required for continued mission operations. The customer representatives will categorize and prioritize BCRs. The contractor will estimate the number of man-hours for each BCR and make a recommendation to the government PM to schedule workload. The Functional Requirements Board will approve an integrated BCR workload for the contractor to schedule. This workload is expected to decrease over the contract period of performance as modernized systems are put into full operational capability and CAMIS functionality is deprecated.

2.4.1.2.1. Software Developers and Software Test Engineers must be certified and maintain an Information Assurance System Architect and Engineer Level II or higher certification IAW AFMAN 17-1303, paragraph 3.2.6.2., and must possess and maintain a Secret security clearance. It is also recommended that the contractor ensure at least one person on the team is certified as Oracle Certified Expert, Oracle Web Services Developer and/or as an Oracle Application Development Framework 12c Implementation Specialist and have at least 1 year of experience.

2.4.1.2.2. As CAMIS is a production application providing critical business operations to the Academy, application changes are required to use a formal development operations and deployment methodology which includes version control, automated regression testing and build, and migration from development system to pre-production (and user acceptance testing) into production during authorized service interruption windows.

2.4.1.2.2.1.   The contractor shall make every effort to ensure quality data is provided to stakeholders. In the event of erroneous data being provided to a stakeholder, the contractor shall submit an After Action Report to the COR. The Contractor shall not bill the government for time spent to identify and correct a data quality/integrity error that was the direct result of the contractor's mistakes.

2.4.1.2.2.2.   The contractor shall ensure software releases do not generate a follow-on incidents due to contractor development errors 95% of the time.   In the event of a contractor generated SPR, the contractor shall submit an After Action Report to the COR within 3 days of identification. The Contractor shall not bill the government for the time spent to resolve the SPR that was the direct result of the contractor's mistakes.

2.4.1.3. Interface Development. As the new USAFA SIS (and other applications replacing CAMIS) moves into production, it is anticipated that CAMIS and the USAFA SIS may need to be synchronized and user access to certain applications may be disabled / deprecated. Additionally, CAMIS will need to assist with migrating data to the USAFA SIS (and other applications replacing CAMIS such as the Cadet Logistics System and the HRM Data Warehouse). To support this a specification for interfaces will be developed and be required to be implemented in CAMIS to support this synchronization.

2.4.1.4.   Functional Requirements Board (FRB). The FRB is a decision making body made up of voting customer representatives from the USAFA Mission Elements (MEs). The FRB prioritizes the BCR workload for developmental operations. The contractor shall support the monthly FRB with briefing slides that update the FRB members on the status of CAMIS metrics and present prioritized BCR workload for customer direction.

2.4.2. Service Transition Management. The contractor shall ensure introduction and deployment of new services and system changes are well managed through proper change management, configuration management, and release/deployment management.

2.4.2.1. Release Management. The contractor shall ensure all releases have a unique identifier that can be used by Configuration Management and documentation standards. Releases will be managed by the following categories

2.4.2.1.1. Major. Normally containing large areas of new functionality

2.4.2.1.2. Minor. Normally containing small enhancements and fixes

2.4.2.1.3. Emergency. Normally containing corrections to a small number of known errors or bugs; sometimes an enhancement to meet an immediate, high priority requirement

2.4.2.2. User Change Management Support. User Change Management Materials (UCM): Prior to final implementation of all user-facing changes, the contractor shall include UCM materials as part of the release package. Prior to and during initial roll-out of each CAMIS capability release that includes a process change, the contractor shall provide lecture-style training sessions (estimated 5 sessions per release) for mission element stakeholders and VIP formatted training for senior leaders and their core personnel (estimated 2 sessions per release). Web-based topical training sessions will occur two weeks prior to and two weeks after a release if requested by the customer or the government PM. In many cases,

pre-recorded video trainings will meet this need. The contractor shall provide to the COR attendee lists of all personnel who attend live training sessions.

2.4.2.3. Configuration Management. The contractor shall maintain the formally approved CAMIS configuration baseline. The contractor shall manage CAMIS configuration to protect system and asset integrity by ensuring only authorized components are used and only authorized changes are made. The contractor shall document all configuration changes in a Configuration Management Plan. The contractor shall identify, control, record, track, report, audit and verify CAMIS services and assets throughout their lifecycles. The contractor shall adhere to the service configuration management process defined in USAFAI 33-115, Attachment 3, to the level of detail declared by the USAFA Configuration Manager. The contractor shall maintain a Configuration Management Plan (CMP) IAW DoD Defense Acquisition Guidebook Configuration Management guidance in both Chapter 4 (Systems Engineering), para 4.2.3.1.6 and Chapter 5 (Life Cycle Logistics) para 5.1.7 and para 5.4.4.4.2. The contractor shall provide the government, upon request, validated background information on any baseline changes that affects the .edu enclave

2.4.2.3.1. Unit Property Manager (UPM). The Contractor shall designate in writing Primary and Alternate personnel to perform the role of UPM for Government Furnished Information Technology Assets on accounts CIOC and A6C1. These persons shall maintain the accounts IAW AFMAN 17-1203, *Air Force Information Technology Asset Management (ITAM)*, paragraph 1.2.14. The contractor shall conduct a joint inventory of all government-furnished property with the outgoing contractor and government personnel. The joint inventory shall be conducted semi-annually and the contractor shall ensure shortages are reconciled IAW FAR 45.503 and 45.504. The contractor shall deliver to the COR a final inventory NLT two business days before the end of contract performance.

2.4.2.3.2. Client Support Technician (CST) duties. The Contractor shall identify in writing personnel to perform the role of CST for Contractor utilized Information Technology Assets. The contractors filling this role shall be certified and maintain an Information Assurance Technician (IAT) Level II or higher certification, preferably Security+, IAW AFMAN 17-1303 paragraph 3.2.1.2 and must possess and maintain a Secret security clearance.

2.4.2.3.3. Documentation. The contractor shall maintain and update CAMIS system documentation to ensure all architectural and configuration changes reflect the current approved configuration baseline.

2.4.2.3.3.1. DOD Architecture Framework (DODAF) Architectures. The contractor shall create and maintain DODAF architectures including data and artifacts that are compliant with the latest version of DODAF for the CAMIS program. The contractor shall submit DODAF compliant architecture data and artifacts in support of CAMIS Program Certification.

2.4.2.3.3.2. Release Packages. The contractor shall provide Release Package documentation as a part of the milestone events for major upgrades and releases. Table 1 contains Release Package requirements. Release Package information shall be maintained in the Requirements Management Repository by the contractor. The contractor shall deliver the "near-final" Design Review Package no later than one week prior to the review. Minor updates and changes to the Design Review Package shall be allowed per PM concurrence. The "final" Design Review Package must be delivered no later than one week after the review.

Table 1. Release Package Contents & Usage

Content Type	Information	Form/Format	Government	Contractor	O&S Change Requests
Scope Statement	• Use Cases, User Story, Storyboards, Context Diagram		X		X

Content Type	Information	Form/Format	Government	Contractor	O&S Change Requests
Requirements	• Bounded User Requirements (BURs)		X	X	X
Business Process	• BPMN formatted process that shows relationships to other processes	BPMN or XPDL	X	X	X
Business Rules	• Roles • Permissions • Constraints	BPMN or XPDL	X	X	X
Information Assets (In/Out)	• Defined in the CAMIS Data Reference Model (DRM)		X	X	X
Related DoDAF Data and Architecture Products	• DoDAF Architecture information not covered in other categories	DoDAF 2.0 or current version	X	X	X
Compliance (Section 508, PII)	• PII Usage • Section 508 • Social Security Number (SSN) reduction • Privacy Act • HIPPA • Technical Standards compliance/usage		X	X	X

Content Type	Information	Form/Format	Government	Contractor	O&S Change Requests
User Change Management Materials	• Wikis • FAQ • Help files • User Guides • Instructor led training materials (e.g., PowerPoint slides) • Limited number of videos			X	X
Prototypes	• Electronic or paper prototypes used to demonstrate knowledge and understanding of the required functionality	Developer prototypes; Process Modeling; Visio, HMTL, RRC, RSA, Oracle Business Process Management Suite 11g		X	X
Pre-Deployment Application	Functioning version of the application in the CAMIS staging environment	As required by the platform and software compiling tool		X	X
Configuration Info	• Updated system and application build guides • System configuration details • Configuration Items			X	X
Information Assurance/ Risk Assessment	• Software Security Vulnerability Scans • Security Risks • Mitigations			X	X
Test Plan	• Test Cases			X	X
Formal/Documented User Acceptance	• UAT signoff			X	X
All Software Code, Templates, etc.	All software related products to implement the capability in the platform	As required by the platform and software compiling tool		X	X

2.4.2.4. Legal, Regulatory, and Policy (LRP) Compliance. The contractor shall comply with legal, regulatory, and policy requirements to include Social Security Number (SSN) Reduction, Section 508, Privacy Act and HIPPA. Provide necessary document to the Program Manager to support compliance validation or requests for exception. The contractor shall provide the COR with the required validated documentation, data, information, and artifacts, as needed, to support compliance to fulfill the National Defense Authorization Act (NDAA) and Clinger Cohen Act (CCA) reporting requirements for program certification. Risk Management Framework Authorization &Assessment (A&A)): The contractor shall provide verified artifacts for system A&A and ensure CAMIS environments maintain compliance with Authority to Operate (ATO) and Authority to Connect (ATC), as approved by the USAFA Authorizing official (AO), the USAFA Superintendent. The contractor shall use AF provided instructions and tools to maintain A&A.

2.4.3. Managerial and Administrative Functions. The contractor shall ensure general managerial and administrative functions are performed. The contractor shall establish a schedule, track risks, and track priorities. The contractor shall report on status for these items during the monthly Program Management Review and documentation shall be provided to the PM and COR upon request.

2.4.3.1. Program Reviews and Updates. The contractor shall update the government PM on a routine basis as described below
2.4.3.1.1. Program Management Review. Contractor shall brief the government PM monthly on the deliverables. These include system performance and help desk metrics, maintenance and upgrade release and milestone schedule, status of hardware and software license/maintenance contracts, change requests, and cybersecurity status.
2.4.3.1.2. Sprint and backlog review. The contractor shall brief the government PM weekly on the contents of the workload. Brief should review the weekly sprint that has recently closed, the current sprint in progress and the upcoming sprint.

2.4.3.2. Schedule.   The contractor shall maintain the master CAMIS Schedule. The schedule shall follow standard project management practices and forecast a 90-day outlook of planned workload. The contractor shall use a government provided project management tool (currently use Jira). Contractor shall ensure developmental and sustainment activities remain on schedule 90% of the time.

2.4.3.3. Contingency Planning
2.4.3.3.1. Risk Management. The contractor shall be responsible and use a risk management tool for monitoring, anticipating, and reporting risks involved with changes to the hardware or software environments. The analysis of the risk shall include alternative approaches to mitigate the risk. The contractor shall brief the government PM monthly on risk management and deliver a Risk Analysis Report per occurrence of identified risk to the COR.
2.4.3.3.2. Continuity of Operations Plan (COOP). The contractor shall update and maintain the CAMIS Continuity of Operations Plan (COOP), which addresses continuance of processing in the event that the host production servers become unavailable for processing. The COOP shall be reviewed for currency, updated as appropriate, but at least annually.
2.4.3.3.3. Vulnerability Management, Incident Response and Disaster Control Plan**.** The contractor shall develop and maintain the CAMIS Vulnerability Management, Incident Response, and Disaster Control Plan, which addresses continuance of processing in the event of a discovered vulnerability, incident or disaster which prevents the host production servers from being available for processing. This plan shall be

reviewed for currency and updated as needed, but at least annually. This may be combined with the COOP with PM approval.

2.4.3.4. Contractor Interface and Support for other Vendors. The Contractor shall contact, escort and coordinate repair/replacement, with any other contract support services (in support of this PWS. The Contractor shall cooperate, share and exchange routine or available technical and system equipment interface information with other vendors in support of this PWS.

2.4.3.5. Technical Exchange Meetings (TEMs).   The contractor shall support TEMs with other USAFA IT functions as required and directed by the government PM. The contractor shall interface directly with the USAFA Communication Squadron (10 CS) representatives, the USAFA.edu enclave provider, to ensure CAMIS remains operational within the USAFA.edu enclave. The contractor shall interface directly with other mission system program offices to ensure CAMIS remains compatible with these mission systems for data exchange.

2.4.3.6. The contractor shall fully utilize all DOD and AF technical support resources available, either in-house or contracted, to help perform troubleshooting actions in support of the systems environments and applications described within this PWS.   Use of government-available technical support resources or third-party contractor support resources shall not alleviate the contractor from providing full technical support to CAMIS systems environments and applications identified within this PWS. The contractor shall provide third party vendor access to CAMIS systems as directed by the government PM.

3. SERVICES SUMMARY

Performance Objective	PWS Para	Performance Measure
The contractor shall provide performance metrics for the operational environments during the monthly PMRs. The performance metrics shall include: • Up-time percent with detail on Unscheduled Downtime Events and Durations (overall and by device) – uptime target is 99.9% • Central Processing Unit (CPU) Utilization - Number of hits (overall and by device) –target utilization should not exceed 10% • Number of queries processed (overall and by device) • System Responsiveness (how long it takes to provide requested content--overall, by page, and by device) • Storage utilization metrics—target utilization should not exceed 30%	2.1.3.2	- On a monthly basis, ensure 99.9% up time (excluding scheduled downtimes) reported as average availability by server - On a monthly basis, ensure average CPU utilization does not exceed 10% - On a monthly basis, ensure average storage utilization does not exceed 30%
The contractor shall ensure CAMIS maintains compliance with Risk Management Framework (RMF) Authorization and Assessment (A&A) process and maintains compliance with the Authority to Operate (ATO) at all times.	2.1.1.5	- CAMIS maintains its ATO/C 100% of the time.
The contractor shall ensure CAMIS has zero non-mitigated Category 1 (Cat 1) and Category 2 (Cat 2) vulnerabilities, as defined in DODI 8510.01, para E2.56 (and	2.1.1.5.1 & 2.1.1.5.2	- Cat I security findings shall be identified and a resolution plan provided within 24 hours of identification, without exception, 100% of the time.

sub paragraphs) and IAW DODI 8510.01, para 6.2.3.1.4 (and sub paragraphs). Contractor shall ensure systems are properly configured IAW the Defense Information Systems Agency (DISA) Security Technical Implementation Guides (STIGs) at all times and are subject to random audit and inspection by USAFA and higher headquarters cybersecurity offices.		- Cat II security findings shall be resolved within 45 business days of identification 100% of the time.
The contractor shall provide tier one through tier three technical support services for CAMIS end users and customers during core operating hours. The contractor shall use and maintain a ticketing system to prioritize and track Service Requests (SRs) and Requests for Change (RFCs)	2.1.2	- On a monthly basis report service desk metrics to include - First contact resolution of incidents (target 95%) - Number of help desk tickets opened during reporting period by category - Number of help desk tickets closed during reporting period by category - Mode of communication with the help desk - Name of organizations requesting support - Types of support requested -"Out of the ordinary" types or quantities of tickets
The contractor shall ensure software releases do not generate a follow-on incidents due to contractor development errors 95% of the time.	2.4.1.2.2.2	- On a monthly basis, 95% of all delivered Requests for Change are accepted by the customer with no follow-on incidents
Contractor shall ensure developmental and sustainment activities remain on schedule 90% of the time.	2.4.3.2	- On a monthly basis, 90% of all developmental and sustainment activities are promoted to production in accordance with the agreed-to schedule.

DELIVERABLES

Common Performance Requirements (CPR) Deliverables: All deliverables are due within 30 days of contract award and as changes are made or as otherwise noted below

- (CPR-1)   Key Personnel Roster
- (CPR-2)   Proof of Certification
- (CPR-3)   Personnel Roster
- (CPR-4)   Configuration Management Plan (CMP)
- (CPR-5)   Information to support USAFA CCBs
- (CPR-6)   CAMIS Release Package
- (CPR-7)   Risk Analysis Report (due monthly)
- (CPR-8)   DoDAF Architectures
- (CPR-9)   Program Management Reviews (due monthly)
- (CPR-10)   Master CAMIS Program Schedule
- (CPR-11)   Authority to Operate (ATO) (due semi-annually)
- (CPR-12)   CAMIS Continuity of Operations Plan (COOP)
- (CPR-13)   CAMIS Vulnerability Management, Incident Response, & Disaster Control Plan
- (CPR-14)   Design Review Package

O&S Performance Requirements (OSPR) Deliverables: All deliverables are due monthly or as noted below

- (OSPR-1)   Throughput Information
- (OSPR-2)   After Action Reports
- (OSPR-3)   Performance Metrics
- (OSPR-4)   Helpdesk Metrics
- (OSPR-5)   Customer Feedback
- (OSPR-6)   Transition Plan
- (OSPR-7)   Joint Inventory (within 30 days of contract award and as changes are made)

APPENDICES

<u>Appendix 1, Acronym Listing</u>

A&A – Authorization and Assessment

ACAS – Assured Compliance Assessment Solution

AD – Athletic Director

AETC – Air Education and Training Command

AF – Air Force

AFI – Air Force Instruction

AFMAN – Air Force Manual

ALO – Admissions Liaison Officer

AMSYS – Admissions System

AO – Authorizing Official

ATO – Authority to Operate

AWS – Amazon Web Services

BCR – Baseline Change Request

BI – Business Intelligence

CAC – Common Access Card

CAL – Category Assurance List

CAMIS – Cadet Administrative Management Information System

CAN – Campus Area Network

CCA – Clinger Cohen Act

CCB – Configuration Control Board

CE – Computing Environment

CES – Civil Engineering Squadron

CLASS – Cadet Logistics and Supply System

CLC – Cadet Life Cycle

CLS – Cadet Logistics System

CMMI – Capability Maturity Model Integration

CMP – Configuration Management Plan

CMRA – Contractor Manpower Reporting Application

CPARS – Contractor Performance Assessment Reporting System

CPR – Common Performance Requirements

CO – Contracting Officer

.COM – Commercial Internet Domain

COMSEC – Communications Security

COOP – Continuity of Operations

COR – Contracting Officer's Representative

COTS – Commercial Off The Shelf

CPU – Central Processing Unit

CR – Change Request

CSSP – Cyber Security Service Provider

CST – Client Support Technician

CS – Communications Squadron

CSV – Comma Separated Value

CTO – Cyber Tasking Order

CW – Cadet Wing

DB -- Database

DBA – Data Base Administrator

DBMS – Data Base Management System

DF – Dean of Faculty

DFARS – Defense Federal Acquisition Regulation Supplement

DNS – DOORS Next Generation

DOD – Department of Defense

DODAF – Department of Defense Architecture Framework

DODD – Department of Defense Directive

DODI – Department of Defense Instruction

DR – Disaster Recovery

DREN – Defense Research and Engineering Network

DSN – Defense Switched Network

DW – Data Warehouse

. EDU – Education Internet Domain

FAR – Federal Acquisition Regulation

FOC – Full Operating Capability

FRB – Functional Requirements Board

FSA – Functional Systems Administrator

FTE – Full Time Equivalent

FY – Fiscal Year

GFI – Government Furnished Information

GFR – Government Furnished Resources

GPA – Grade Point Average

GOTS – Government Off the Shelf

HIPAA – Health Insurance Portability and Accountability Act

HQ USAF – Headquarters United States Air Force

HQ USAF/A1 – Headquarters United States Air Force Deputy Chief of Staff for Personnel

HRM – Human Resource Management

IAM – Information Assurance Manager

IAT – Information Assurance Technician

IAVA/IAVM – Information Assurance Vulnerability Alert/Memo

IAW – In Accordance With

IOC – Initial Operating Capability

ISSM – Information Systems Security Manager

ISSO – Information Systems Security Officer

ITIL – Information Technology Infrastructure Library (ITIL)

JER – Joint Ethics Regulation

LMS – Learning Management System

LRP – Laws, Regulations and Policy

ME – Mission Element

.MIL – Military Internet Domain

MPA – Military Performance Average

NDAA – National Defense Authorization Act

NIPRNET – Non-secure Internet Protocol Router Network

OBIEE – Oracle Business Intelligence Enterprise Edition

ODC – Other Direct Costs

OID LDAP – Object Identifiers Lightweight Directory Access Protocol

OPA – Overall Performance Average

OPSEC – Operations Security

O&S – Operations and Sustainment

OSPR – O&S Performance Requirements

OV – Operational View

PA – Privacy Act

PEA – Physical Education Average

PII – Personally Identifiable Information

PL – Preparatory School

PL/SQL – Procedural Language/Structured Query Language

PM – Program Manager

PMO – Program Management Office

PMR – Program Management Review

PWS – Performance Work Statement

QA – Quality Assurance

QC – Quality Control

QCP – Quality Control Plan

QSR – Quality Status Report

RFC – Request for Change

RHCE – Red Hat Certified Engineer

RHEL – Red Hat Enterprise License

RMF – Risk Management Framework

RR – Director of Admissions

HP – Hewlett Packard

RRC – Rational Requirements Composer

SIPRNET – Secure Internet Protocol Router Network

SIS – Student Information System

SMART - Specific, Measurable, Achievable, Relevant, and Time-bound

SPR – Software Problem Request

SR – Service Request

SSN – Social Security Number

STIG – Security Technical Implementation Guide

SV – Services View

TEM – Technical Exchange Meeting

TV – Technical View

UAT – User Acceptance Testing

UCM – User Change Management

UPM – Unit Property Manager

USAFA – United States Air Force Academy

USAFAI – United States Air Force Academy Instruction

VM – Virtualized Machine

VNC – Virtual Networked Computer

Appendix 2, Architectures

Note: updated copies of architecture diagrams will be attached here

Appendix 3, CAMIS Associated Systems
The CAMIS applications logistics, training, education, and medical/dental support functions as currently executed with other associated systems and applications that rely directly on CAMIS for execution of cadet lifecycle activities. The OV-1 architecture depicts the CAMIS system boundary including externally dependent applications and systems within scope of this PWS. CLASS is embedded in the Active Cadet database and the Oracle mid-tier applications; therefore, CLASS is also within the CAMIS system boundary.
The capabilities from the following systems, sub-systems, and applications shall be operated and maintained by the contractor in support of this PWS:

- Active Cadet Database
- Preparatory School Database
- Historical Database
- Resource Databases (e.g., OID LDAP DB)
- CAMIS Applications and their supporting Oracle Forms and Reports and OBIEE Worksheets
- USAFA Xpress-MP Algorithms
- Cadet Logistics and Support System (CLASS) - Oracle Forms and Reports
- Cadet Injury/Illness Surveillance System (CIIS) - .NET application

Appendix 4, Historical Staffing and Workload

CAMIS 2.0 (Legacy CAMIS) and CAMIS 3.0 (Modernized CAMIS) are operated and sustained by two separate contractors. This solicitation integrates CAMIS O&S into a single contract. Each contract currently has its own program manager, help desk technician, functional systems administrator, client services technician, database administrator, developers and tester. It is expected the new contractor will find some efficiencies managing both systems.   It is anticipated that the new integrated contract will likely have the following roles

- Task Order Program Manager
- Architect/Quality Assurance Manager
- Oracle Web Services Engineer
- Test Lead
- Software Developers
- Middle Tier Systems Administrator
- Red Hat Operating Systems Administrator
- VMWare Operating Systems Administrator
- Cybersecurity Systems Administrators
- Help Desk Technician

This solicitation focuses more on IT Service Operations and less on Software Development Operations due to our modernization efforts and implementation of the new USAFA SIS Service.

Below is an analysis of Legacy CAMIS support provided under the current contract broken out by the current Change Request (CR) schema:

Annual Averages/Info Change Requests, by type, for 2014 - 2017								
		(Hours)			Duration (Calendar Days)			
CR Type	**Submitted**	**Average**	**Smallest**	**Largest**	**Average**	**Smallest**	**Largest**	**Canx.**
AHX	23.50	33.92	1.0	260.0	20	3	63	1.25
ANL	5.50	42.06	5.2	260.0	69	1	244	2.25
BCR	39.25	55.93	1.3	800.0	171	4	973	17.25
M&T	22.00	222.69	2.0	3000.0	350	22	699	0.50
MSP	52.50	58.57	1.3	1500.0	387	15	548	0.75
SPR	40.50	36.97	1.0	1058.2	68	2	375	3.50

AHX – Ad hoc Query or Request: Request to update incorrect data in the database, query the database, or request a onetime request to output data from the database through other than an existing form, report, or workbook. CAMIS is not user friendly and end users rely on the CAMIS staff to complex data queries. The average annual man-hours required to support ad hoc queries is 782.

ANL – Analysis of System: Requests to provide analysis of CAMIS system or application requirements, conformance, interfaces, or performance. The average annual manhours to support these requests is 210. However, these type of requests are expected to decrease significantly due to replacement by the new USAFA SIS Service.

BCR – Baseline Change Request: Request for an enhancement of an existing function or application. Modify or tune an existing function to include functional changes driven by business rule changes. The average annual manhours to support these requests is 2,184. However, these type of requests are expected to decrease significantly due to replacement by the new USAFA SIS Service.

M&T – Routine ongoing maintenance, updates, or training. This workload category contains the preponderance of IT Service Operations workload. The average annual manhours to support these requests is 4,906.

MSP – Mission Support: Recurring mission support for a USAFA business process (mission), typically with repetitive frequency. Typically issued for the duration of a semester or a calendar year or contain reference to the frequency of occurrence within that period. The average annual manhours to support these requests is 3,127 and include much of the critical even support and data exchanges.

SPR – Software Problem Request: Request to fix something broken for an existing capability which is not functioning correctly. The average annual manhours to support these requests is 1,517 to manage incidents and problems.

Although this workload data represents an accurate reflection of current contract and can be used for basis of estimation for work captured via the ticketing system, this may not be adequate for the vendor to understand the full historic workload. Based on this the government has provided staffing based on the existing contracts, vendors may propose different staffing and this is provided as a convenience and not direction. Vendors should ensure that proposed staffing is realistic and ensure they describe how their proposed staffing model is able to execute the full scope of work using industry best practices, such as Information Technology Infrastructure Library (ITIL), to deliver service operations, service design/development operations, and service transition.

Personnel Function	CAMIS 2 Contract FTE	CAMIS 3 Contract FTE	Notes
Task Order Program Manager	1	1.25	**CAMIS 3 supports a remote PM for additional oversight. CAMIS 2 Help Desk Technician provides additional oversight.**
Architect/Quality Assurance Manager	0	.5	**CAMIS 3 support remote QA review for all documentation**
Oracle Web Services Engineer	0	.5	
Test Lead	.5	1	
Software Developers	3.5	2	
Database Administrator	1	.5	

Middle Tier Systems Administrator	**1**	**.5**	
Red Hat Operating Systems Administrator	**.5**	**.5**	
VMWare Operating Systems Administrator	**.5**	**.5**	
Cybersecurity Systems Administrators	**.5**	**1**	
Help Desk Technician	**1**	**1**	

Vendors should also note that pending successful deployment of the USAFA SIS (Fall 2019 estimated FOC), USAFA Data Warehouse (Fall 2019 estimated FOC), and USAFA Cadet Logistics System (Fall 2019 estimated FOC), the workload tied to the CAMIS system and development operations (and associated service transition) should reduce to decommissioning components and ensuring patches are installed.

Appendix 5, System Characteristics and Attributes

CAMIS Characteristics
The table below summarizes these characteristics of the CAMIS system.

Characteristic	Value
Number of databases	9
Number of applications/high-level functions	71
Total size of all current CAMIS databases	~310GB
Total size of all cadet data/CAMIS related databases	~ 55GB
Number of documented business processes executed by the system	~90
Total number of CAMIS database tables (excluding Q2 and associated systems being considered for integration under modernization)	1,208
Number of external CAMIS system interfaces	~30
Number of unique algorithms	~ 12
Number of CAMIS servers and devices	21
Number of CAMIS Oracle forms	~490
Number of CAMIS Oracle reports	~930

CLASS:
CLASS is embedded within a legacy CAMIS Oracle 12c architecture.

Characteristic	Value
Number of databases (integrated into CAMIS Active Cadet DB)	1
Number of applications/high-level functions	74
Total size of current CLASS database	(Included in CAMIS)
Number of documented business processes executed by the system	3
Total number of CLASS database tables	86
Number of external CLASS system interfaces	1
Number of unique algorithms	1
Number of CLASS servers and devices	(Included in CAMIS)
Number of forms and reports	74 Forms, 60 Reports

USAFA Business Processes and Rules
CAMIS supports over 47 USAFA business processes, some of which are unique to a military service academy (e.g., military performance grading) while others are common to a civilian academic institution (e.g., academic grading). Some business rules are captured within the CAMIS business process flows and data dictionary, while other business rules are encoded and not readily discoverable.
CAMIS Data
CAMIS data consists of four different types: Privacy Act (PA), Personally Identifiable Information (PII), Health Insurance Portability Protection Act (HIPPA), and non-sensitive generic data of cadets, faculty and support staff.

CAMIS Attributes

Factor	Data
Supported User Population	~7500 Users
Number of concurrent users	Less than 10%
Application age	The original CAMIS dates back to a 1979 mainframe implementation. Legacy CAMIS inherited many mainframe paradigms during the Y2K cutover from the mainframe to Oracle Forms and Reports
Function Points Inputs	See the Forms and Reports Catalogs in GFI
External Inputs	See the SV-6, Systems Data Exchange Matrix, within the GFI
External Outputs	See the SV-6, Systems Data Exchange Matrix, within the GFI
External Interfaces	See the SV-6, Systems Data Exchange Matrix, within the GFI
External Inquiries	See the SV-6, Systems Data Exchange Matrix, within the GFI
Initial response time	Aside from algorithmic scheduling processes, response time shall be less than 2 secs Algorithmic scheduling processes may take up 8 hours.
Life expectancy	Legacy CAMIS shall be retired NLT FY18
Operating system	See the COOP in GFI
Platform	See the COOP in GFI
Programming Languages	See the COOP in GFI
Database	Oracle 12c
COTS	See the COOP in GFI
Avg transactions per day	See the Metrics in GFI
Interfaces	See the SV-6, Systems Data Exchange Matrix, within the GFI
Average help desk call volume	

Appendix 6: CAMIS Software and Hardware Warranty Listing

Item	Quantity
Fortify HP	9
Camtasia Studio Academic Licenses	2
PL/SQL Developer	1
NetBackup Veritas (OPT Tape Drive)	1
NetBackup Veritas (UX1 Server)	1
NetBackup Veritas (Std Client XPLAT Server)	1
VMware vSphere Support (Enterprise Plus)	24
VMware vCenter Server Support	2
VMware Support Subscription	6
NetApp Non-Returnable Disk	4
NetApp SupportEdge (4hr onsite)	4
Jira (Server 100 user academic license)	1
Jira Service Desk (10 agents)	1
Zephyr for Jira (100 user license)	1
Kerberos Authentication for Jira (100 users)	1
JSU Suite Utilities for Jira (100 user license)	1
Subversion ALM (100 user license)	1
Red Hat Linux Ent v6	9
Red Hat Linux Support agreement	3
RealVNC	100
Dell PowerVault Tape Library	1
Chef Automate	100
Xpress Mosel	2
RRC DNG Analyst Single Install License	5
RRC DNG Contributor Single Install License	6
RRC Analyst Floating License	5
RRC IBM Contributor Floating license	2

Appendix 7: CAMIS As-Is Functions/Applications Listing

Title	Description	Lifecycle	Customers
Athletics Candidate Counseling	The Athletic Candidate Counseling system supports administrative duties associated with counseling potential and accepted athletic candidates to USAFA. The ACC Collects and recruits intercollegiate athletes and works closely with the Admissions process.	Recruitment, Athletic	AD, RR
All Cadet Honors	Calculates "honors" lists for the cadet wing. Includes Dean's List, Commandant's list, and Athletic Director's List. Scored on a 0.0 – 4.0 scale.	BCT, Education, Athletic, Military, Graduate	AD, CW, DF
Admissions Transfer	Transfers data from Admissions database into the Active Cadet database prior to In-processing. Primarily Per Data, Med Status, and perhaps Security Clearance. USAFA and Prep School implementations perform slightly differently.	Admissions, In-Processing	DF, PL, RR, SCA
Association of Graduates	Transfer data from CAMIS to Associate of Graduates Database, via Oracle Discoverer/Excel exports. Primary runs occur when a new class arrives and after graduation. The AOG is the Academy Alumni Association (Association Of Graduates).	Admissions, In-Processing, Graduate, Post Graduate	AOG, Process
Air Force Personnel Center (AFPC)/CAMIS	Container application for views required by AFPC/CAMIS data exchanges Also used in Cadet History for reference tables to Air Force organizations.	In-Processing, BCT, Military, Graduate, Post Graduate	AFPC, XP
Academic Review Committee	This application supports the Dean's office and the Academic Review Committees (ARC) in processing academically deficient Cadets for possible disenrollment. It automatically places academically deficient Cadets on Academic Probation and produces ARC Agendas. It provides forms for tracking the ARC process and produces 1st and 2nd ARC Notification Letters and well as Dean's Letters as required. The ARC boards are chaired by O6's on the faculty. Used 5 times a year (Mid-term and End-of-Semester for Fall and Spring and End-of-Term for Summer).	Education	DF, PL

Title	Description	Lifecycle	Customers
Academic Schedules	Uses algorithm to place cadets into courses by using one semester of registration information (cadets signed up for courses) and one semester of course information (when courses are offered, sections sizes, etc).	Education	DF, PL
Academy Scholars Program	Allows for entering and tracking of academically talented Cadets invited, or those on Waiting Scholars List, to enter the Academy Scholars Program.	Education	DF
Activities	Master list of activities in which cadets participate. Includes one Season Clubs, Intramurals, and Intercollegiates. Every cadet must participate in an activity each season. Assigns officers-in-charge to clubs and coaches to sporting activities. Also identified as ACT.	Education, Athletic, Military	AD, CW, DF
Conduct Aptitude Probation	The CAP application tracks cadets on conduct and aptitude probation.	Education, Athletic, Military, Graduate	CW
Cadet CPRII Consolidation	Leave, pass, and accountability application to allow the cadets to log out and in when leaving the cadet area. Allows entry of reoccurring events and viewing of daily status reports for squadron, group, and wing.	Education, Athletic, Military	CW
Cadet Awards	Computes order of merit for the various academic majors and establishes criteria for top graduate awards, Graduate Scholarship Program (GSP), in addition to athletic, squadron and group awards. This function handles all logistics for planning and staging the various award ceremonies. Maintains the administrative data related to each award (sponsorship, contacts, etc).	Education, Athletic, Military	AD, CW, DF, XP
Character Development Workbook	Uses Discoverer Workbooks to provide data and labels to the Character Development Office. Also known as CHD.	Admissions, In-Processing, BCT, Education, Athletic, Military, Graduate	CHD, CW
Cadet Discipline	Creates new Conduct and Aptitude Probations and provides information on the offense and the circumstances leading to the probation.	Education, Athletic, Military	10ABW, CW
Cadet Excusal System	Used for Scheduling Committee Actions for cadet excusal processing.	Education, Athletic, Military	CW, DF

Title	Description	Lifecycle	Customers
Course Grades	Uploads grade information into CAMIS twice each semester (mid-term and final grades). Allows direct editing of grades, and upload of grades file(s). Various grade reports.	Education, Athletic, Military	DF, PL
Chaplain	Allows cadet chaplains to query for and update religious preferences.	In-Processing, BCT, Education	DPY, HC, PL
Clubs	Assigns cadets to student led and organized extracurricular clubs and activities.	Education, Athletic, Military	CW
Classroom Assignments	Assigns scheduled courses, final exams, and other events to rooms. Allows maintenance of Buildings and Rooms and preferred rooms for courses and exams.	Education, Military	DF, PL
Course Master	Master course list for historical and active courses. A course may be academic, physical education, military training, flying, etc. Includes 'Roll Forward' function to populate data from prior academic period. Allows maintenance of Divisions and course metadata.	Education	DF, PL
Cadet Pay	Builds 80-column ascii text files for manual upload to DJMS (JUMPS) records for "incoming" class.	In-Processing, Graduate	DPY, FM
Cadet Schedules	This application displays the fall, spring or summer cadet schedules and is accessed from the Cadet User Home Page of CAMIS.	Education	CW
Course Validation and Transfer	Identifies AP courses and transfer courses that can be substituted for USAFA courses and applied toward graduation requirements. Includes AP credit, prior college courses, and validation exams.	Admissions, In-Processing, BCT, Education	DF
Cadet Departure	Cleans database for cadets that depart for reasons other than graduation.	Education, Athletic, Military	DF
Disenrollment	Disenrollment processing.	Education, Athletic, Military	DPY, XP
Dental Classification	Tracks the cadet's dental status and periodic appointments.	BCT, Education, Athletic, Military	10ABW
Drug Testing Workbook	Oracle Discoverer workbook with cadet drug testing information that can be accessed by ".edu" users.	Admissions, In-Processing, BCT, Education, Athletic, Military	10ABW
Duty Status Update	Updates duty status for cadets.	In-Processing, BCT, Education, Athletic, Military, Graduate	DPY

Title	Description	Lifecycle	Customers
Cadet Email Account Mgt	Discoverer Workbook to provide Network Management with various lists of cadets and their email accounts. Displays export for Cadet Email for Incoming Class Year, Late Grads, Squadron Shuffle and Departed cadets.	In-Processing, BCT, Education, Graduate	10ABW, SCA, SCBN
Final Exam Scheduling	Schedules all courses requiring an exam and attempts to minimize conflicts.	Education	DF
Fitness Testing	Used to manage Aerobics Fitness Test (AFT) and Physical Fitness Test (PFT).	Recruitment, In-Processing, BCT, Athletic, Military, Graduate	AD, PL
Force Protection and Accountability	A leave, pass, and accountability system to allow the cadets to log in and out when leaving the cadet area. Allows CQs to enter events occurring and create daily status reports for squadron, group, and wing.	Education, Athletic, Military	CW, PL
Performance Computes	Calculates multiple GPAs (cum and semester GPA, majors GPA, core GPA, etc.). Re-computes OPA based on changed GPA. Allows maintenance of course repeat substitutions. Allows GPA compute for entire wing, single class year, or single or multiple cadets. Various reports.	Education, Athletic, Military, Graduate	DF, PL
Graduate Record Examination	Uploads data from ETS after cadets take GRE.	Education	DF
Graded Review Scheduling	Allows for preferences to be defined for when GRs should occur. Schedules GRs and attempts to minimize conflicts so multiple GRs are not required of a cadet at the same time. Allows email notification of scheduling coordinators, preferences, roll forward of prior academic term preferences, 'release' of schedules by DFR. Various reports.	Education	DF
Graduation	Used to maintain information relating to cadet graduation.	Graduate	DF
Honors Jury & Probations	Selects cadets for honor board juries and tracks cadets who have served on honor board juries.	Education, Athletic, Military	CW
Academic Semester Information (APS/Grad Check)	Generates Academic Program Summary reports and graduation checks.	Education, Military	DF
Incoming Class	Used by Cadet Wing for in-processing of Cadets.	In-Processing	AD, CW
Intramurals	Tracks intramural sports and assigns cadets to sports.	Athletic	AD, CW

Title	Description	Lifecycle	Customers
Cadet History Database	Holds data transferred from the Active Cadet database as well as updated information obtained from the MILPDS UOR.	Post Graduate	XP
AFSC – Front End	Allows for identification of preferred AFSCs, preferred bases, and intent to marry. Algorithm runs best fit population into AFSCs. Creates orders for cadets for first assignments.	Education, Graduate	DPY
Lists and Labels	Provides customization, viewing and printing of lists and labels.	Admissions, In-Processing, BCT, Education, Athletic, Military, Graduate, Post Graduate	AD, CW, DF
Major, Advisor, and Minor Assignment	Used to Assign Major, Advisor, and Minor Assignment to cadets.	Education	DF
Master Calendar	Defines the academic year, terms, and seasons.	In-Processing, BCT, Education, Athletic, Military	DF
Military Performance Appraisal	Uploads MPA scores to CAMIS.	Education, Athletic, Military	CW
Medical Status	Allows inquiries and updates to medical duty status information for a cadet. Past medical history of a cadet can be viewed for diagnostic purposes.	Education, Athletic, Military	10ABW, DPY
Non-Academic Scheduling	Non-Academic Scheduling looks at "free" periods in the Academic Schedule for a cadet to place medical, dental, tailor shop, photo, etc appointments.	Education, Athletic, Military	10ABW, AD, CW
Intercollegiates	Assigns cadets and faculty to intercollegiate sports. Manage PE course sequences that apply to each sport or for non-ICs.	Education, Athletic	AD
Active Cadet -> History Transfer	OUT is collection of tools used to maintain the integrity of the Active Cadet and Cadet History databases.	Graduate	DF, RR, XP
Probation – Athletics	Examines cadet AFT, PFT, intramural sports, and PE courses to determine cadets that need remedial athletic training.	Education, Athletic	AD
Preliminary Course Offering Information	Registrar uses function to generate a list of all courses that a department must offer in the next semester. Department provides information about class size, when the course will be held (morning, afternoon, etc), section size, etc.	Education, Athletic, Military	AD, CW, DF, PL
Physical Education Average	Calculates the Physical Education Average. Combines AFT, PFT, and Phys Ed course scores. Scored on a 0.0 – 4.0 scale.	Athletic	AD

Title	Description	Lifecycle	Customers
Cadet PE Course Preferences	Allows non-IC (intercollegiate athletes) freshman to view their preferred PE electives.	Athletic	AD
Personnel Data	Tracks data associated with cadets, graduates, staff members, and cadet POCs.	Admissions, In-Processing, Education, Athletic, Military	AD, AFPC, AOG, CHD, CW, DF, DPY, FM, HC, PL, Process, RR, SCA, SCBN, SG, XP
4th Class Placement	Places core courses for entering 4th classmen across 4 years. Accommodates validation and transfer credit.	In-Processing, Education	AD, DF
Academic Probation	Function from the ARC application which determines whether Cadet is placed on academic probation. The most severe reason for the academic probation is stored in the system.	Education	DF
Progress Check	Produces progress reports for cadet mid-semester and end of semester grades and pushes reports to cadet website.	Education	DF
Personnel Summaries	Reports cadet pertinent data and history while attending the USAF Academy.	Education, Athletic, Military, Graduate	AD, CW, DF, PL, XP
Prep School Placement	Place Cadet-Candidates into common courses for each term.	Admissions, In-Processing	PL
Registration of Academic Courses	Used once a semester to drop and add courses to a cadet's schedule.	Education, Athletic, Military	AD, CW, DF, PL
Main Report Text	This application allows a administrative system developer to edit the text of a report/letter based on an application system and the role that has access to the application. Ability to maintain different paragraphs of a product.	All	CAMIS Developer
Graduation Requirements	Identifies all course requirements for graduation (core, major, and minor) by class-year.	Graduate	DF
Scholarships	Identifies cadets eligible to compete for graduate scholarships and to record the scholarships for which they are interested in competing.	In-Processing, Education, Athletic, Graduate, Post Graduate	DF
Sectioning	Splits each course into sections after scheduling of academic courses is completed.		DF

Title	Description	Lifecycle	Customers
Sponsorship	Tracks sponsor information and events. Matches sponsor to cadet based on compatibility components that are collected.	Education, Athletic, Military, Graduate	CW
Squadron Assignments	Computes placement of cadets as they enter the academy into permanent squadrons (1-40). Function balances intellects, athletes, males, females, etc in to appropriate squadrons.	Education, Athletic, Military	CW, PL
Student File	Oracle Discovery queries used to extract data from the Admissions database to display every individual that applied for the academy for that year.	Admissions, In-Processing	XP
Summer Programs	Schedules cadets into summer programs and allows for on-line viewing of the summer program schedules.	Education, Military	CW
Transcripts	Generates official USAFA transcripts.	Education, Athletic, Military, Graduate	DF, PL, XP
Athletic Trophies	Graduation Athletic trophies for intramurals, PE, intercollegiate, etc.	Athletic	AD, CW
Uniformed Officer Record	The UOR represents a process that allows information on former Cadets to be updated within the CAMIS system.	Post Graduate	PL, Process, XP