



**VA ELECTRONIC HEALTH RECORD MODERNIZATION
(EHRM) SYSTEM
PERFORMANCE WORK STATEMENT (PWS)
DEPARTMENT OF VETERANS AFFAIRS**

Office of Electronic Health Record Modernization (OEHRM)

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

Date: July 29, 2020

VA-20-00083649

Task Order PWS Version Number: 2.9

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

Contents

1.0	BACKGROUND.....	3
2.0	APPLICABLE DOCUMENTS.....	3
3.0	SCOPE OF WORK.....	3
3.1	APPLICABILITY.....	4
3.2	ORDER TYPE.....	4
4.0	PERFORMANCE DETAILS.....	4
4.1	PERFORMANCE PERIOD.....	4
4.2	PLACE OF PERFORMANCE.....	4
4.3	TRAVEL OR SPECIAL REQUIREMENTS.....	4
4.4	CONTRACT MANAGEMENT.....	4
4.5	GOVERNMENT FURNISHED PROPERTY.....	5
4.6	SECURITY AND PRIVACY.....	5
4.6.1	POSITION/TASK RISK DESIGNATION LEVEL(S).....	6
5.0	SPECIFIC TASKS AND DELIVERABLES.....	6
5.1	PROJECT MANAGEMENT.....	6
5.1.1	CONTRACTOR PROJECT MANAGEMENT PLAN.....	6
5.1.2	REPORTING REQUIREMENTS.....	6
5.1.3	TECHNICAL KICKOFF MEETING.....	7
5.2	PILOT MIGRATION SCOPE DEFINITION AND REQUIREMENTS ANALYSIS.....	7
5.3	INCORPORATE PROVEN IOC DATA MIGRATION CAPABILITIES INTO BASELINE EHRM DEPLOYMENT SERVICES.....	11
5.4	PILOT DATA MIGRATION DEVELOPMENT PROCESS.....	11
5.4.1	DATA DESIGN.....	12
5.4.2	CUTOVER DATA TRANSFORMATION AND TERMINOLOGY MAPPING 12	
5.4.3	DATA MIGRATION DEVELOPMENT, TESTING, AND DEPLOYMENT ...	13
5.4.4	DATA MIGRATION RECURRING PROCESSING.....	15
5.5	ADDITIONAL DATA MIGRATION AND INGESTION DEVELOPMENT (OPTIONAL TASK).....	16
6.0	GENERAL REQUIREMENTS.....	17
6.1	PERFORMANCE METRICS.....	17
6.2	SECTION 508 –INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) STANDARDS.....	18
6.3	REPRESENTATION OF CONFORMANCE.....	18
6.4	ACCEPTANCE AND ACCEPTANCE TESTING.....	19
6.5	SHIPMENT OF HARDWARE OR EQUIPMENT.....	19
6.6	ORGANIZATIONAL CONFLICT of INTEREST.....	19
6.7	DELIVERABLES.....	19

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

1.0 BACKGROUND

The mission of the Department of Veterans Affairs (VA) is to provide benefits and services to Veterans of the United States. In meeting these goals, VA strives to provide high quality, effective, and efficient Information Technology (IT) services to those responsible for providing care to the Veterans at the point-of-care as well as throughout all the points of the Veterans' health care in an effective, timely and compassionate manner. VA depends on Information Management/Information Technology (IM/IT) systems to meet mission goals.

On May 17, 2018, VA entered into a 10-year indefinite-delivery, indefinite-quantity (ID/IQ) sole-source contract with Cerner Government Services, Inc. (Cerner) to acquire the Electronic Health Record (EHR) system being deployed by the Department of Defense (DoD) and related services for deployment and transition across the VA enterprise in a manner that meets VA needs, and which will enable seamless healthcare to Veterans and qualified beneficiaries. Procurement of a single common system across VA and DoD shall achieve VA's goal of seamless care for Veterans by facilitating the transition of active duty military members to VA and improving their timely access to the highest quality of care.

Cerner's EHR solution shall provide VA with a single system that can store and retrieve administrative, clinical, laboratory, radiology, pharmacy and scheduling data, and can interact with other internal and external systems. Modernization of VA's EHR will support a Veteran-centric, team-based care model, with modern decision support tools; clinical information content services; identification, communication and standardization of care paths; and resource provisioning. This will improve interoperability, performance, and user experience for the majority of health care delivery and ancillary teams responsible for directly or indirectly providing health care services; and in turn will improve quality, safety, and timeliness of health care services delivered to Veterans.

Cerner shall provide a comprehensive EHR solution and services as specifically defined in the EHRM Basic contract. This Task Order (TO) requires additional data migration analysis, design, development, testing and execution to reduce manual data entry requirements during deployment site cutover from VistA to EHRM.

2.0 APPLICABLE DOCUMENTS

The documents in Paragraph 3.0 in the EHRM Basic PWS apply to the performance of this effort, there are no additional referenced documents.

3.0 SCOPE OF WORK

The Contractor shall provide data migration analysis, design, development, testing and execution in support of data migrations. These tasks include:

- a. Project Management
- b. Pilot Migration Scope Definition and Requirements Analysis

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

- c. Incorporate Proven IOC Data Migration Capabilities into EHRM Deployment Services
- d. Pilot Data Migration Development Process
- e. Data Migration and Ingestion Technical Support

3.1 APPLICABILITY

This Task Order (TO) PWS is within the scope of paragraphs 5.1 Project Management, 5.5.3 EHRM and VA System Integration, 5.5.8 Test and Evaluation, 5.6.11 Test and Evaluation – Deployment, and 5.9 Analysis and Migration of Legacy Data of the EHRM Basic PWS.

3.2 ORDER TYPE

The effort shall be proposed on a Firm Fixed Price (FFP) basis.

4.0 PERFORMANCE DETAILS

4.1 PERFORMANCE PERIOD

The Period of Performance (PoP) shall be 18 months from the date of award with one optional task that can be exercised multiple times, as required.

4.2 PLACE OF PERFORMANCE

Efforts under this TO shall be performed both in Contractor facilities, as well as VA facilities. Program meetings may also be held at VA Central Office, some of which may require in person attendance. Project management activities that occur at the enterprise level shall be performed at Contractor facilities.

4.3 TRAVEL OR SPECIAL REQUIREMENTS

The Government anticipates travel to perform the tasks associated with the effort, as well as to attend program-related meetings or conferences throughout the PoP. Include all estimated travel costs in your firm-fixed price line items. These costs will not be directly reimbursed by the Government.

The total estimated number of trips for this effort shall be proposed by the Contractor. Anticipated locations include, but are not limited to, Washington, DC.

4.4 CONTRACT MANAGEMENT

All requirements of Section 9.0 of the EHRM Basic PWS apply to this effort. This TO shall be addressed in the Contractor's Monthly Progress Report as set forth in the EHRM Basic contract.

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

4.5 GOVERNMENT FURNISHED PROPERTY

The Government has multiple remote access solutions available to include Citrix Access Gateway (CAG), Site-to-Site Virtual Private Network (VPN), and RESCUE VPN.

The Government's issuance of Government Furnished Equipment (GFE) is limited to Contractor personnel requiring direct access to the network to: development environments; install, configure and run Technical Reference Model (TRM) approved software and tools (e.g., Oracle, Fortify, Eclipse, SoapUI, WebLogic, LoadRunner); upload/download/ manipulate code, run scripts, and apply patches; configure and change system settings; check logs, troubleshoot/debug, and test/QA.

When necessary, the Government will furnish desktops or laptops, for use by the Contractor to access VA networks, systems, or applications to meet the requirements of this PWS. The overarching goal is to determine the most cost-effective approach to providing needed access to the VA environment coupled with the need to ensure proper Change Management principles are followed. Contractor personnel shall adhere to all VA system access requirements for on-site and remote users in accordance with VA standards, local security regulations, policies and rules of behavior. GFE shall be approved by the Contracting Officer's Representative (COR) and Program Manager (PM) on a case-by-case basis prior to issuance.

Based upon the Government assessment of remote access solutions and requirements of this TO, the Government estimates that the following GFE will be required by this effort:

Standard laptops: 5

Developer laptops: 35

The Government will not provide IT accessories including but not limited to Mobile Wi-Fi hotspots/wireless access points, additional or specialized keyboards or mice, laptop bags, extra charging cables, extra Personal Identity Verification card readers, peripheral devices, or additional Random Access Memory (RAM). The Contractor is responsible for providing these types of IT accessories in support of this effort as necessary and any VA installation required for these IT accessories shall be coordinated with the COR.

4.6 SECURITY AND PRIVACY

All requirements in Section 7.0 of the EHRM Basic PWS apply to this effort.

It has been determined that protected health information may be disclosed or accessed and a signed Business Associate Agreement (BAA) shall be required. The Contractor shall adhere to the requirements of the BAA executed between OEHRM and Cerner Corporation; and shall comply with VA Directive 6066 and VHA Handbook 1605.05.

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

4.6.1 POSITION/TASK RISK DESIGNATION LEVEL(S)

The position sensitivity and the level of background investigation commensurate with the required level of access for all PWS tasks is Tier3/Non-Critical Sensitive in accordance with Section 8.7 of the EHRM Basic PWS.

The Tier3/Non-Critical Sensitive Position Sensitivity and Background Investigation requirements identify, in effect, the Background Investigation requirements for Contractor individuals, based upon the tasks the particular Contractor individual will be working. The submitted Contractor Staff Roster must indicate the required Background Investigation Level for each Contractor individual based upon the tasks the Contractor individual will be working, in accordance with their submitted proposal.

5.0 SPECIFIC TASKS AND DELIVERABLES

The Contractor shall perform the following:

5.1 PROJECT MANAGEMENT

The Contractor shall provide a single Point of Contact for management of all project tasks, with individual subject matter experts assigned as required to each individual pilot. The Contractor shall include a Communications Plan in the Contractor Project Management Plan (CPMP) to cover overall and individual point of contact (POC) communications as well as issue escalation procedures.

5.1.1 CONTRACTOR PROJECT MANAGEMENT PLAN

The Contractor shall deliver a Contractor Project Management Plan (CPMP) that lays out the Contractor's approach, timeline and tools to be used in execution of this TO effort. The CPMP should take the form of both a narrative and graphic format that displays the schedule, milestones, risks and resource support. The CPMP shall also include how the Contractor shall coordinate and execute planned, routine, and ad hoc data collection reporting requests as identified within the PWS. The initial baseline CPMP shall be concurred upon and updated in accordance with Section B of the TO. The Contractor shall update and maintain the VA Program Manager (PM) approved CPMP throughout the PoP.

Deliverable:

- A. Contractor Project Management Plan

5.1.2 REPORTING REQUIREMENTS

The Contractor shall provide a Monthly Progress Report in accordance with Section 9.6.1.1 of the EHRM Basic PWS. The Monthly Progress Report shall include:

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

- a cumulative executive summary of task order accomplishments and status of each pilot project in the pipeline
- a listing of meetings occurring during the month with the reason for the meeting and primary VA and Cerner attendees listed.

For all deliverables throughout this TO, Wiki links are not acceptable. The Contractor shall submit written documentation representative of the current state at the time of submission.

Deliverable:

- A. Monthly Progress Report

5.1.3 TECHNICAL KICKOFF MEETING

The Contractor shall hold a technical kickoff meeting within 20 business days after TO award. The Contractor shall present, for review and approval by the Government, the details of the intended approach, work plan, and project schedule for each effort. The Contractor shall specify dates, locations (can be virtual), agenda (shall be provided to all attendees at least five calendar days prior to the meeting), and meeting minutes (shall be provided to all attendees within three calendar days after the meeting). The Contractor shall invite the Contracting Officer (CO), Contract Specialist (CS), COR, and the EHRM PM.

5.2 PILOT MIGRATION SCOPE DEFINITION AND REQUIREMENTS ANALYSIS

The Contractor shall provide multidisciplinary teams of analysts, designers, and architects to support scope definition and requirements analysis of potential data migration pilots designed to reduce manual input during deployment cutover and in turn reduce patient safety risk and increase user acceptance.

For all potential pilots identified below, the Contractor shall:

- a) Define requirements
- b) Determine data availability and sources
- c) Analyze automation feasibility and gaps
- d) Scope initial pilot for VA review and approval including estimated level of effort, and timeline.
- e) Evaluate the need for new data sets to be included in data syndication and Seamless Interop to include Record Retrieval Service (RRS) and Record Synchronization Service (RSS).
- f) Document all findings for each pilot individually in a Pilot Scope Analysis and Requirements Document.

Upon Task Order Award, the Contractor and VA shall jointly review the pilot data migration projects listed below to determine prioritization and contractor analysis timeline required in order to determine the priority and appropriate timeframe for all analysis projects. A joint decision meeting shall be held after two weeks to finalize the analysis timeline and priority. Upon VA review of the Pilot Scope Analysis and

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

Requirements Document, VA may request, and the Contractor shall formally propose a development timeline, milestones, and pricing in accordance with the IDIQ fixed price labor categories for the pilot under consideration for development. Upon VA acceptance of the proposal, the Contractor shall initiate pilot development tasks following the process described in PWS task 5.4.

Pilot data migrations and processes to be analyzed shall include the following:

1. **Open Orders – Consults**: Automate manual data entry required for cutover: (700,000 Community Care consults in October/ November 2018. (~300-400K per month; VISN 20 average about 30k per month)
2. **Open Orders – Labs**: Automate manual data entry required for cutover
3. **Open Orders – Radiology**: Automate manual data entry required for cutover
4. **Organ Transplant and Treatment Registry (OTTR)**: Automate migration of available data such as historical data lab results/problems/encounters/notes from HealthIntent/EDW to OTTR. Identify and plan for automated migration of other source data as feasible. Note that:
 - a) Initial data migration is needed for testing prior to planned Puget Sound and Portland go-live.
 - b) Only 13-15 sites require this migration. Pilot shall include data scoping to include documenting data requirements and identifying data sources of all VA Transplant Centers beyond Puget Sound.
 - c) Need to include considerations that patients may come from VISNs external to the deployment site, and/or some may have data available from care provided in the Military Health System (MHS) and/or available through Health Information Exchange (HIE).
 - d) Gap Analysis and report of Cerner ability to store non-Vx130, OTTR-requested data in HealthIntent and provide to OTTR as Cerner may not have some of these fields in current commercial base.
5. **Health Factors** (historical) needed in Millennium workflows (including and not limited to **Spinal Cord Injury-Disorder, Nursing, Life-Sustaining Treatment and Advanced Directive**, and **Social Work** health factors).VA has results in the longitudinal record from the migration of historical Health Factor data from Vx130 that in many cases may be related to workflows in Millennium. The Contractor shall work with VA to:
 - a) Analyze the various workflows and “builds” to determine if data equivalent to historical Health Factor data is or will be captured in Cerner via HealthRegistries, PowerForms, Event Set Hierarchies (ESHs), Discrete Task Assays (DTAs), etc. Identify use cases to determine the optimal approach for transforming and migrating historical data into Millennium and/or HealthIntent, as appropriate, with the understanding that the approach used to migrate historical Health Factor data to Millennium may vary depending on where the data will land in Millennium.

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

- b) The Contractor shall, in conjunction with OEHRM Data Migration Team and applicable EHR Councils (EHRs), determine whether health factors should be migrated to Millennium or whether the “Result” representation of the historical HF data that has been ingested into HealthIntent and is viewable through the HealthRecord viewer is sufficient. Alternatively, the Contractor, OEHRM and EHRs shall identify whether Millennium workflows can include a widget to pull health factor data from HealthIntent.
 - c) Analyze Millennium and HealthRegistries workflows and data needs to determine where patients may be asked to answer questions they may have already answered through various Vista-based screenings or clinical reminder dialogues
 - d) For all instances where historical health factor data would be of value in Millennium or HealthRegistries (e.g., for data analysis and trending, , to alleviate potential distress to patients or delays in care by asking questions already asked and answered, etc.), investigate methods to make historical information available in Millennium to avoid re-asking or re-collecting this data patients for older data and to track trends.
6. **Additional migrations from CS1 and CS2 domains** including:
- a) Radiology DX Codes (and required expansion of HealthIntent and Millennium information/data models to properly accommodate them)
 - b) Data fields from CS1 and CS2 domains that were deferred to post-IOC
 - c) Vitals Qualifiers – field not included in VX130 – circumference Vital sign without qualifier identifying the meaning. Field is now in VX130. Qualifier is mappable to SNOMED. Task is to migrate the data field from VX130 and ingesting to Millennium. This is adding an additional field to existing domains.
 - d) Veterans Benefits Administration (VBA) History and Claims Flag:
Expanded migration of claims history and ingestion of a claims flag to identify records related to ongoing claims.

In order to address Appeals for Claims Adjudication and update claims or complete a new claim, VBA has additional data needs from those fields currently included in the bulk data migration. The contractor shall analyze the VBA data needs and determine how to meet the data gaps needs: The specific domains under consideration include:

- 1) 1 Problems
- 2) 2 Allergies
- 3) 3 Medications – Outpatient
- 4) Procedures – Outpatient
- 5) Procedures – Inpatient (Patient Treatment File – PTF)
- 6) Immunizations
- 7) Notes/Documents (Text Integration Utilities – TIU)
- 8) Lab - Chemistry/Hematology
- 9) Radiology Reports

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

- 10) Vital Signs
- 11) Encounters – Outpatient (Patient Care Encounters – PCE)
- 12) Encounters – Inpatient (PTF)
- 13) Diagnoses – Outpatient
- 14) Diagnoses – Inpatient (PTF)
- 15) Patient Demographics (MVI)
- 16) Patient Demographics (VistA)
- 17) Employee/Provider Demographics
- 18) Lab – Anatomic Pathology
- 19) Lab – Microbiology
- 20) Health Factors

VBA has an obligation to ensure the Veteran Service Organizations and other Veteran activist groups who have Power of Attorney have access to Veteran records. Currently, the VSOs use Compensation and Pension Record Interchange (CAPRI) to view the data. The Automated Medical Information Exchange (AMIE 2) package is the VISTA data source that provides the data for CAPRI. The contractor shall evaluate the AMIE2 packages and other VistA data sources to ensure the AMIE 2 data is available in Millennium. The Contractor shall ensure that the Millennium System of Record Notice for Millennium describes and meets the VBA uses of the data.

7. **Expanded Capacity of Prescription Data Migration for Testing:** The Contractor shall expand the prescription data migration tool developed for use during the cutover to Cerner from VISTA/CPRS in the immediate hours preceding go live in Cerner. This tool is designed to move active (actionable) prescriptions with refills into Cerner PowerChart. In order to complete large volume load tests, the Contractor shall expand the migration tool to allow it to automatically pass large numbers of prescriptions refill requests to Cerner Pharmacy (Meds Manager Retail) and then allow the batch processing tasks to be performed which will send these prescriptions onto CMOP. This will allow for stress testing of both data migration and CMOP batch transmission with emulation of the volume of transactions that will be encountered between EHRM and CMOPs as multiple sites are deployed over time. The Contractor shall:
 - a) Provide a Prescription Data Testing Expansion Plan and Timeline for VA review and approval
 - b) Test patient and lifetime pharmacy encounter creation (manual)
 - c) Run United States Postal Service address validation service
 - d) Load test data format agreed upon by VA and Cerner
 - e) Provide consulting hours to analyze failures
8. **Synchronous Data migration testing platform**
 - a) Develop capability for fully filtered, deduplicated, and transformed Millennium data from I1930 to be shared with and/or accessible to VA via APIs for purposes of High-Volume, Tools-based Data Migration Validation Testing (HVTBDMVT).

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

- b) Develop a methodology and implement a capability for eliminating Temporal Asynchrony (TA) between datasets used in the comparative analyses performed by the test and evaluation team during HVTBDMVT.

Deliverable:

- A. Pilot Scope Analysis and Requirements Document per Pilot Migration

5.3 INCORPORATE PROVEN IOC DATA MIGRATION CAPABILITIES INTO BASELINE EHRM DEPLOYMENT SERVICES

The Contractor shall refine and package initial IOC migration routines to create a validated, repeatable migration process for the following automated, cutover-related migrations. For each ruggedization project identified, the Contractor shall follow the process in PWS section 5.4.5 including:

- a) Automate IOC routines: package and create a recurring migration utility for use at each deployment site
- b) Test the packaged utility
- c) Identify possible site variations
- d) Create automated and/or manual processes to address variations.

IOC Data Migration Capabilities to be incorporated into baseline EHRM deployment services shall include:

1. **Open Orders- Prescriptions:** Open Orders – Prescriptions (Active/Actionable)
Note: this is currently being worked for Spokane and will be needed for all other deployments.
 - Automated migration has been built and is being tested for IOC.
2. **Future Appointments:** Note: this is currently being worked for Columbus CSS deployment and will be needed for all other CSS and EHRM deployments. This includes:
 - a) migration of future scheduled appointments from the source system to Millennium and load non-clinical scheduling orders related to migrated appointments in Millennium
 - b) Migrate patient demographic history from HealthIntent to Millennium

5.4 PILOT DATA MIGRATION DEVELOPMENT PROCESS

The Contractor shall execute the Pilot Migration Development Process, as identified in this section and its' associated subsections for each of the pilots listed in Section 5.2 that are selected for development by VA. As identified in Section 5.2, following the VA review of the Pilot Scope Analysis and Requirements Document, VA may request, and the Contractor shall formally propose a development timeline, milestones, and pricing in accordance with the IDIQ fixed price labor categories for the pilot(s) under consideration for development. Upon VA acceptance of the pilot proposal(s) and TO modification, the

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

Contractor shall initiate pilot development tasks following the process described in PWS task 5.4 and associated subtasks subject to the not-to-exceed (NTE) CLIN ceiling.

The Contractor shall tailor the processes identified in this PWS section to meet the individual technical requirements of each pilot under development.

The Contractor shall present the tailored process for VA review and approval prior to initiating development activities.

For each pilot under development, the Contractor shall provide functionality demonstration or reviews at regular intervals during development to enable the Government to provide feedback and approval that development completed to date and remaining planned functionality under development meets VA needs. The Contractor shall propose the schedule for these regular or milestone-based demos/reviews appropriate to each individual development effort.

The Contractor shall present interim work products at each step of the development process in regular review meetings with VA. Upon completion of each pilot under development, the Contractor shall deliver a Pilot Technical Documentation Package including:

- a) Pilot Technical Design Document
- b) Data Transformation Document/Terminology Mapping Report/Transformation Map
- c) Data Migration Testing Artifacts update to the Contract Master Test Plan
- d) Data Migration Deployment Guide including domain- or Data Source-Specific Upload Readiness Plan

Deliverable:

- A. Pilot Migration Technical Documentation Package

5.4.1 DATA DESIGN

For each pilot migration, the Contractor shall perform data requirements management and analysis to include working with VA to define data use cases; requirements for data integrity, data quality/validation, performance, sustainability, etc.

5.4.2 CUTOVER DATA TRANSFORMATION AND TERMINOLOGY MAPPING

The Contractor shall perform data transformation and terminology mapping for each cutover-related data migration, as appropriate. In cases where historical VA data has been ingested into HealthIntent and bulk migrated to Millennium (e.g., Active/Actionable Medications) and in cases where data will be coming in from other Health Care Systems through Record Synchronization Service (RSS), the Contractor will ensure the same terminology mappings and translations, Filter, Deduplication, and

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

Transformation (FDT) rules, as well as DCW-related transformations are applied to these data before they are migrated into Millennium. The Contractor shall:

- a. Perform data mapping (source to target): Leverage any prior cutover mapping to ensure that source data is delivered to the same target via automation as it was via prior methods (e.g. manual, semi-automated cutover)
- b. Perform data transformation (as applicable): Leverage any prior cutover transformation to ensure that source data is delivered to the same target via automation as it was via prior methods (e.g. manual, semi-automated cutover)
- c. Perform terminology language normalization requirements (as applicable): leverage any prior cutover normalization to ensure that source data is delivered to the same target via automation as it was via prior methods (e.g. manual, semi-automated cutover)
- d. Analyze the VA-provided format of the raw data feed from VistA to create data transformations into the internal HealthIntent and/or Millennium data models, as appropriate. These VA original fields, transformations and Cerner destination fields shall be documented in a Data Transformation Document provided to VA for approval before final implementation.
- e. Map the VA-provided codes into the standards used in Millennium for those domains that included coded terminology data that needs normalization. When the source data includes VA proprietary or non-standard codes the Contractor will suggest a map to standards. The recommended mappings will be provided to VA in a Terminology Mapping Report for VA approval before implementation. The Terminology Mapping Report shall include a list of proprietary codes for which there is not enough information in the feed to determine a standard code mapping for VA to recommend a mapping or determine that the item will not be mapped to a standard code.

5.4.3 DATA MIGRATION DEVELOPMENT, TESTING, AND DEPLOYMENT

The Contractor shall make all necessary configuration changes to HealthIntent, HealthEDW, and/or Millennium, as appropriate to support VA's data migration requirements. The Contractor shall process the incoming data loads provided by VA as defined by the ICDs, including any required transformation and normalization. The Contractor shall work with VA to coordinate data migration testing and deployment. The Contractor shall develop cutover-related data migration load routines which processes to minimize the time between cutover-related migration of data to Millennium and go live and in the cases of open orders, consults, prescriptions, develop the corresponding technology to complete or close out those orders/actions in VistA. For each cutover-related data source, the Contractor shall also validate the quantity and quality of the data migrated to Millennium, to include ensuring all appropriate terminology mappings, filtering, deduplication, transformation, and normalization is applied.

The Contractor shall:

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

- a. Provide secure File Transfer Protocol capability for 2-way transfer of data migration-related data between VA and Cerner.
- b. Develop a Data Migration Test Plan that combines a high-volume, tools-based data migration validation approach that compares received and expected values at each step along the data migration pathway (e.g., from Vx130 to Millennium, including all HealthIntent (to include PCST terminology mappings) to HealthEDW to post-Filter, Deduplication, and Transform (FDT) to Millennium (including all Data Collection Worksheet (DCW)-driven changes) tailored to each migration to be addressed within the scope of this TO as well as a visual verification of all migrated data for up to 25 randomly selected patients in I1930. The Data Migration Test Plan shall be integrated into the overall Contractor Master Test Plan with input and concurrence from the VA EHRM Test Lead.
- c. Develop Testing Artifacts such as test scenarios, test cases, test data and test results to execute and report on data migration testing activities. The Contractor Test Report of Findings/Test Analysis Report shall serve as the key test artifact for the formal deliverable process. Other test artifacts: test cases, test results, etc. shall be entered and maintained in tools as outlined in Contractor Master Test Plan and OEHRM Test Evaluation Master Plan as the work is being executed.
- d. Provide OEHRM CMO and TIO as well as VA Test & Evaluation with all required terminology mappings/translations and filter, deduplication, and transform logic, including Data Collection Worksheet (DCW) mappings to Millennium code sets and values to test the integrity of each active data migration including the transformations from VA to Hel and methodology to test the integrity of data as it moves from Hel (to include PCST terminology mappings) to HealthEDW to post-Filter, Deduplication, and Transform (FDT) to Millennium (including all Data Collection Worksheet (DCW)-driven changes).
- e. Provide support for execution of VA Test & Evaluation, acceptance and data integrity and validation testing including defect/issue process, assistance in troubleshooting/triaging, jointly troubleshooting issues, and responding to findings from test activities.
- f. Conduct system performance monitoring to ensure scalability and reliability of the data migration architecture (to include a methodology for ensuring no records are “lost” along the data migration pathway) as well as the availability, reliability, and accuracy of the data in HealthIntent, HealthEDW, and Millennium. VA’s goal in Data Migration-related Testing is assessing performance and ensuring the integrity of the migration activity as well as the completeness and accuracy of the data from VA boundary to Hel, HealthEDW, and Millennium.
- g. Execute data migration into both non-production and production environments.
- h. Test and validate data migration in both non-production and production environments.
- i. Produce a domain- or data source-specific Master Data Migration Transformation Map that describes in detail at the data element level, all changes to the data (e.g., terminology mapping changes, FDT changes, DCW changes, etc.) at each step in the Data Migration Pathway between the VA data source and Millennium.

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

- j. Develop the Data Migration Deployment Guide Including back-out and rollback procedures.

As required, the Contractor shall conduct a Pre-Go-Live Review with data migration stakeholders outlining the enterprise-wide and site-specific data migration pre-deployment activities, and the tasks, responsibilities and support required from VA during go-live and in accordance with the VA-approved Deployment Plan. The site-specific data migration pre-deployment activities will align with the VA-approved Deployment Plan. Following the Review, the Contractor shall obtain official VA Go-Live Authorization by obtaining approvals from the key stakeholders including:

- a. VA Test Lead
- b. Site Clinical Lead – for site-specific data migrations, and
- c. Enterprise Clinical Lead – for enterprise data migrations

5.4.4 DATA MIGRATION RECURRING PROCESSING

The Contractor shall tailor the processes identified in this PWS section to meet the individual technical requirements of each pilot under development. The Contractor shall present the tailored process for VA review/approval prior to initiating development activities. Following completion of the pilot migration, the Contractor shall Identify next steps for scope expansion, if any, and incorporate the automated solution into baseline EHRM deployment services for future deployment TOs.

Automated data migration at cutover will need to occur for every deployment of Cerner Millennium across the VA. As such, the Contractor will need to develop and maintain a well-understood, repeatable, and sustainable process that can be used for all deployments. To develop this well-understood, repeatable, and sustainable process, the Contractor shall design, test, and conduct the following cutover-related data migration activities:

- a. Coordinate with VA to perform connectivity tasks including establishing authority to connect and connection access to the source system(s), as required. Connectivity tasks shall be processed in a timely manner to maintain the Integrated Master Schedule (IMS).
- b. Create a detailed Cutover-related data migration plan for review and approval by VA. The plan shall include timing, milestones and dependencies of migration activity as well as specification of the data to be migrated and the methodology for validation of data migration accuracy.
- c. Design the solution to migrate at cutover for each VA deployment, the data domains or data source identified in section 5.2.1, to include mapping the data from Vx130 or other VA data source to Millennium and identifying the appropriate terminology mappings/translations, FDT logic, DCW mappings, etc., as appropriate, in consultation with OEHRM TIO and OEHRM CMO Data Migration Teams.

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

- d. Develop and deliver a ***cutover-related data migration service*** for each domain or data source that would be reusable for all Cutover-related data migrations across all VA sites. This migration service shall:
 1. Develop and deliver the technology/technical solution needed (e.g., Extract, Transform, and Load (ETL) or Application Programming Interfaces (APIs), etc.) for each specific cutover-related data migration to ensure a repeatable and adaptable process for migrating these data at cutover for all VA Sites.
 2. Extract and convert or transform the data within the domain or data source, as appropriate, for migration to Millennium. This would include but is not limited to applying the same PCST mapping translations and post-HealthIntent/HealthEDW Filter, Deduplication, and Transform (FDT) rules, and Millennium DCW mappings as done for Historical Bulk Migration of data from Vx130 to HealthIntent and subsequent migration of data into Millennium as was done for historical data.
 3. Provide domain- or source-specific reports that includes statistics on each data domain/source that includes, but is not limited to:
 - i. Number of records and volume of data received
 - ii. Number of records and volume of data migrated through each step in the data migration pathway (VA source to Millennium, including the number of records and volume of data if the data had gone through the Historical Bulk Migration pathway through HealthIntent to HealthEDW to Millennium)
 - iii. Exception Reporting for missing data, detected anomalies, etc.

For data that are unable to be migrated using the automated migration at cutover, the Contractor shall work with the site to determine the estimated timing of any manual backload activities required. The Contractor shall provide consulting guidance to VA Super Users in entering any such data needed in Millennium for go-live and beyond.

5.5 ADDITIONAL DATA MIGRATION AND INGESTION DEVELOPMENT (OPTIONAL TASK)

Data migration and ingestion requirements continue to evolve to meet VA priorities and may require completion of additional data migrations and ingestions throughout the PoP of this Task Order. VA may exercise this optional task for additional data ingestions and migrations throughout the PoP of this PWS. This optional task can be exercised multiple times, from time to time, throughout the PoP for a total amount not to exceed the NTE Optional Task CLIN ceiling. Additional tasks may include such items as:

1. Package pilot data migrations and processes for repeated use at future deployment sites.
2. Comprehensive Report of all data from all sources (e.g., VX130, interfaces, data migrations at Cutover, HIE, core build, etc.)
3. New bulk migrations and ingestions such as:
 - a. Non-VA Meds

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

- b. Surgery Implant/Tissue info
- c. Lab - Blood Bank
- d. Medications - Inpatient BCMA
- e. Medications - Inpatient IV
- f. Medications - Inpatient Unit Dose
- g. Lab - Microbiology Detailed Results
- h. Appointments - Historical (primarily for No shows, etc.)
- i. Functional Status (FIM)
- j. Local Patient Record Flags (category 2)
- k. Claims/AR - For reimbursing veterans for covered expenses
- l. C/P exam reports

6.0 GENERAL REQUIREMENTS

6.1 PERFORMANCE METRICS

The table below defines the Performance Standards and Acceptable Levels of Performance associated with this effort. The Government may also utilize the commercially available and VA-specific Key Performance Indicators (KPIs) and Service Level Agreements (SLAs) defined at the ID/IQ level to measure performance under this TO, as applicable.

Performance Objective	Performance Standard	Acceptable Levels of Performance
A. Technical / Quality of Product or Service	<ol style="list-style-type: none"> 1. Shows understanding of requirements 2. Efficient and effective in meeting requirements 3. Meets technical needs and mission requirements 4. Provides quality services/products 5. Meets performance thresholds/metrics defined in applicable Service Level Agreements 	Satisfactory or higher
B. Project Milestones and Schedule	<ol style="list-style-type: none"> 1. Quick response capability 2. Products completed, reviewed, delivered in accordance with the established schedule 3. Notifies customer in advance of potential problems 	Satisfactory or higher

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

Performance Objective	Performance Standard	Acceptable Levels of Performance
C. Staffing	<ol style="list-style-type: none">1. Currency of expertise and staffing levels appropriate2. Personnel possess necessary knowledge, skills and abilities to perform tasks	Satisfactory or higher
D. Invoicing	<ol style="list-style-type: none">1. Invoices are current, accurate, and complete.	Satisfactory or higher
E. Management	<ol style="list-style-type: none">1. Integration and coordination of all activities to execute effort	Satisfactory or higher

The COR will utilize a QASP throughout the life of the TO to ensure that the Contractor is performing the services required by this PWS in an acceptable level of performance. The Government reserves the right to alter or change the QASP at its own discretion. A Performance Based Service Assessment will be used by the COR in accordance with the QASP to assess Contractor performance.

6.2 SECTION 508 –INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) STANDARDS

All requirements in Sections 8.10, including subparagraphs, of the EHRM Basic PWS apply to this effort. Deliverable requirements are further defined in the following subparagraphs. The Contractor shall comply with the technical standards at: <https://www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-ict-refresh/final-rule/single-file-version>

6.3 REPRESENTATION OF CONFORMANCE

The Contractor shall provide a Section 508 Subject Matter Expert lead for VA EHRM 508 resources to work with. The Contractor shall adhere to the VA-approved Section 508 Test and Delivery Plan and Section 508 Accessibility Roadmap delivered under TO 0001. The Contractor shall update the Government Product Accessibility Template (GPAT) and/or Voluntary Product Accessibility Template (VPAT) delivered under TO 0001 to indicate the level of Section 508 conformance as updates are made to its products and/or services to ensure and sustain 508 compliance.

The Contractor shall work closely with VA Section 508 representatives to verify Section 508 conformance of its products and/or services.

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

6.4 ACCEPTANCE AND ACCEPTANCE TESTING

The Contractor shall provide Final Section 508 Compliance Test Results. The Section 508 Test Results shall include a GPAT/VPAT Conformance Statement validating conformance to Section 508 Refresh Success Criteria and Conformance Requirements for already-developed ICT deliverables.

The Final Section 508 Test Results shall be reviewed and approved by VA Section 508 representatives to validate conformance to Section 508 Refresh Success Criteria and Conformance Requirements for ICT deliverables.

For software development for VA interfaces/systems, the Contractor shall prepare and submit a Section 508 Conformance Validation Package with content as outlined in VA Process Asset Library, Software Development Product Build process map.

The Section 508 Conformance Validation Package shall be reviewed and approved by VA Section 508 representatives to validate conformance to Section 508 Refresh Success Criteria and Conformance Requirements for ICT deliverables.

Automated test tools, manual techniques, and checklists are used in the VA Section 508 compliance assessment.

Deliverable:

- A. Final Section 508 Compliance Test Results for ICT Deliverables
- B. Section 508 Compliance Validation Package for ICT Deliverables

6.5 SHIPMENT OF HARDWARE OR EQUIPMENT

Not applicable.

6.6 ORGANIZATIONAL CONFLICT OF INTEREST

All functions related to Acquisition Support shall be on an advisory basis only. Please be advised that since the awardee of this Task Order will provide systems engineering, technical direction, specifications, work statements, and evaluation services, some restrictions on future activities of the awardee may be required in accordance with FAR 9.5 and the clause entitled, Organizational Conflict of Interest, found in Section H of the EHRM basic contract. The Contractor and its employees, as appropriate, shall adhere to the corporate-level Non-Disclosure Agreement signed under TO 0001.

6.7 DELIVERABLES

The Contractor shall provide deliverables for Government review and acceptance IAW with Section B.2 of the Task Order. The Contractor shall incorporate Government feedback provided via the OEHRM Deliverables review process into Task Order deliverables as applicable. Feedback shall be incorporated in either the resubmission or

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

next required submission of the deliverable based upon the timeframe in which it is provided by the Government. For Government feedback requiring additional discussion and/or clarification, the Contractor shall coordinate language updates with VA to resolve and finalize revisions to the affected deliverable. The Contractor shall appropriately mark and date deliverables to maintain version control using the following format: TO Number – CLIN Number Formal Deliverable Title – Deliverable Due Date IAW Section B.2– Version X.X. The Contractor shall annotate major (initial submission) and minor (resubmission) deliverable releases using a numerical system (e.g. Initial submission: TO 0001 – 0001AA Contractor Project Management Plan - August 2018 – Version 1.0; Resubmission: TO 0001 – 0001AA Contractor Project Management Plan – August 2018 – Version 1.1). Resubmitted deliverables shall maintain the original due date defined in Section B.2 of the TO. The Contractor shall provide discrete deliverables in separate email submissions. Email submissions shall include the Contract/Task Order numbers and corresponding deliverable CLIN number. The Contractor shall track updates in both major and minor deliverable releases in an agreed upon format, such that the Government can identify and review language revisions for acceptance.

For all deliverables throughout this TO, Wiki links are not acceptable. If Wiki page content is required as part of the deliverable submission, the Contractor shall reference the Wiki page as an attachment within the deliverable. The Wiki page shall be representative of the current state at the time of submission. The Contractor shall export the referenced Wiki page as a timestamped portable document format and provide the referenced attachment(s) with the deliverable submission.

DATA MIGRATION FOR OPTIMIZED CUTOVER AND EHRM DATA INGESTION

VA-20-00083649

CONTRACTOR EMPLOYEE PERSONAL FINANCIAL INTEREST/PROTECTION OF SENSITIVE INFORMATION AGREEMENT

This Agreement refers to Contract/Order _____ entered into between the Department of Veterans Affairs and _____ (Contractor).

As an employee of the aforementioned Contractor, I understand that in connection with my involvement in the support of the above-referenced Contract/Order, I may receive or have access to certain "sensitive information" relating to said Contract/Order, and/or may be called upon to perform services which could have a potential impact on the financial interests of other companies, businesses or corporate entities. I hereby agree that I will not discuss or otherwise disclose (except as may be legally or contractually required) any such "sensitive information" maintained by the Department of Veterans Affairs or by others on behalf of the Department of Veterans Affairs, to any person, including personnel in my own organization, not authorized to receive such information.

"Sensitive information" includes:

- (a) Information provided to the Contractor or the Government that would be competitively useful on current or future related procurements; or
- (b) Is considered source selection information or bid and proposal information as defined in FAR 2.101, and FAR 3.104-4; or
- (c) Contains (1) information about a Contractor's pricing, rates, costs, schedule, or contract performance; or (2) the Government's analysis of that information; or
- (d) Program information relating to current or estimated budgets, schedules or other financial information relating to the program office; or
- (e) Is properly marked as source selection information or any similar markings.

Should "sensitive information" be provided to me under this Contract/Order, I agree not to discuss or disclose such information with/to any individual not authorized to receive such information. If there is any uncertainty as to whether the disclosed information comprises "sensitive information", I will request my employer to request a determination in writing from the Department of Veterans Affairs Contracting Officer as to the need to protect this information from disclosure.

I will promptly notify my employer if, during my participation in the subject Contract/Order, I am assigned any duties that could affect the interests of a company, business or corporate entity in which either I, my spouse or minor children, or any member of my immediate family/household has a personal financial interest. "Financial interest" is defined as compensation for employment in the form of wages, salaries,

