EHRM External RFP Review Matrix

Item #	Author	Comment	Response	Modifications to RFP
JM1	Jon Manis	In this contract (and I may have missed it), I could find no clear definition of expectations regarding Cerner's ability to "interoperate" with other EMR vendors (Epic, Meditech, Eclipsys, Allscripts, etc.). Though there is reference to interoperability, my suspicion is that it is defined as "the passing of certain clinical data elements" or "the exchange of certain relevant clinical data elements" between disparate EMR vendors. This may be defined as data exchange or interface, but it is not the true, seamless interoperability or integration that was suggested in conversations I have participated in with VA stakeholders.	**IDIQ PWS Section 5.10.4: Seamless Interoperability / Joint Industry Outreach** includes significant detail on the topic. The interoperability section is copied below this table for reference. **IDIQ PWS section 5.5.4 Data Exchange - Application Program Interface (API) Gateway** also includes detail on the creation of strategic open APIs. **VA NF-177: Interoperability - Data Standards:** The system shall support the use of the health data standards identified in the VA DoD Health Information Technical Standards Profile and by the VA DoD Interagency Clinical Informatics board, including following common data standards: National Information Exchange Model NIEM; Health Level 7 HL7; Logical Observation Identifiers, Names and Codes LOINC; Systematized Nomenclature of Medicine SNOMED; RxNorm, MedRT, ICD, CPT, HCPCS, Veteran Information Model VIM; and Healthcare Information Technology Standards Panel HITSP as well as VA/DOD/IPO extensions to these standards. **VA-NF-T23: Informatics - Care Integration:** VA must be able to seamlessly integrate with HIE and external-to-EHR shared services to provide for a seamless experience and to more effectively integrate in community care efforts, as well as with other parts of VA (e.g., identity management). This includes but is not limited to the EHR product ability to support external shared services (SOA services, such as identity management, care plan service, scheduling, etc.) accessed via standards-based APIs. (Process Continuity, Evolution, Extension) KSR5 [NOW +] **VA NF-Z11**: **Health Information Exchange:** The system shall support VA electronic exchange of health records via other interoperable networks (e.g. CareQuality, CommonWell Health Alliance, DirectTrust, National Association for Trusted Exchange) by supporting their specifications, security and content specifications	***No change required.***
JM2	Jon Manis	I bring this issue to the fore only because my conversations have led me to believe that the VA was pursuing a contractual obligation for "true interoperability" with this Cerner contract. Any such interest would require contractual terms and a clause developed, agreed to, and executed by Cerner as well as the other primary EMR vendors (Epic, Eclipsys, Meditech, Allscripts, and others). Failing such a contractual obligation, the Cerner contract represents an exceptional current-state software agreement, but no significant progress or advancement toward true EMR interoperability.	See response to JM1. Also, the RFP represents a contractual agreement with Cerner. Cerner has agreed to open APIs, VA data rights, and adherence to data standards to support interoperability. Outside of the Cerner contract, VA is actively pursuing partnerships with other health system providers to meet Cerner's commitment to data sharing.	***No change required.***
JM3	Jon Manis	I could not find specific reference to existing data and the migration of existing data from the current VistA databases to the Cerner database. Is this multiple data migrations? From how many existing databases to how many instances of the Cerner database?	**IDIQ PWS section 5.1.8: Data Migration Planning:** - details on data migration planning including: The Contractor shall support data migration planning to support seamless care and to ensure operational integrity. **The Contractor shall:** a) Develop a Data Migration Plan (DMP) that provides an understanding of the EHRM Solution implementation sequence and priorities, data quality, data volumes, and data extract, transformation and load strategy for both the EHRM and Population Health Management solutions. **IDIQ PWS 5.9: 5.9 Analysis And Migration Of Legacy Data** The Contractor shall execute the following data migrations in alignment with the EHRM wave deployment schedule. Data migrations include: a) VA clinical data migrated to HealtheIntent – initially 15 domains b) Non-DICOM Images c) DICOM images i. Reference ii. Diagnostic quality **Additional migrations shall occur following the overall EHRM schedule:** a) Bulk VA data from HealtheIntent to Millennium – initially 5 domains i. Initially PAMPI: Problems, Allergies, Medications, Procedures, Immunization ii. Moving to PAMPI+ iii. DICOM imaging and imaged documents and other multi-media will not be included In the initial phases of migration. b) Iterative migration of remaining VistA clinical, dental, administrative and financial data that is relevant for clinical care, registries, reporting, or analytics to additional domains in HealtheIntent and/or Millennium Priorities will be determined by the Data Governance Board. c) Migration or archiving of remaining VistA data per direction of the Data Governance Board to enable retirement of VistA instances. The Contractor shall develop the data processing scripts including terminology mapping to standards and information model transformation. The Contractor shall migrate VistA legacy data into HealtheIntent utilizing a historical bulk load and an ongoing update stream during the deployment time period based upon the following process: a) VA will physically transport the historical load to the Cerner Data Center and restore onto an environment established for hosting VA data; b) VA will manage the ongoing update stream; c) The Contractor will ingest, aggregate, normalize and standardize the VA data into HealtheIntent and/or Millennium by a predetermined method.	***No change required.***
JM4	Jon Manis	VistA and (ancillary systems displacements) should have a data migration schedule with data integrity assurances.	The details of data migration scheduling for VA enterprise data, VA IOC deployment data and imaging will be included in the data migration task order and Cerner proposal in response to that task order.	***No change required.***

JM5	Jon Manis	I could not find specific reference to EMPI and identity management. I would be concerned about duplicate records, record resolution. The expectation should be defined with a timeline and acceptable error rate. What is the process and accountability for duplicate resolution?	**IDIQ PWS Section 5.5.2: Identity and Access Management** includes significant detail. **VA NF-15: Th**e system shall be able to synchronize all patient identities to the enterprise Identity Management System (i.e., DEERS, MVI) **VA - NF 24: When communications allow, the system shall enforce a search to the enterprise Identity Management System (i.e., DEERS, MVI) prior to adding a new patient** VA-NF52: The system shall support the matching of External Patient IDs coming in through eHealth Exchange/CommonWell and other community partner systems.	***No change required.***
JM6	Jon Manis	Is there a specific listing of ancillary systems that will be displaced by the Cerner EMR? If so, I did not see that listing.	Yes, VA has compiled a mapping of Cerner to VistA modules to identify what VistA components will or will not be replaced by Cerner modules. That list is used internally by VA to determine next steps for remaining VistA components. As these components will not be replaced or managed by Cerner, they are no listed as part of the Cerner RFP. The Cerner solution replaces all clinical modules of VistA and does away for the need of many non-clinical modules.	***No change required***
JM7	Jon Manis	Is there a specific listing of ancillary systems that will be retained post Cerner EMR implementation?	Yes. VA is maintaining a list of ancillary systems that will be retained. As these systems will not be managed by Cerner, they are not listed as part of the Cerner RFP.	***No change required.***
JM8	Jon Manis	I did not see a specific reference to system performance commitments. Such a reference should include defined response times (user defined performance, not machine defined performance), uptime commitments and resolution accountabilities. These should be defined by the VA, not by Cerner.	**VA NF-86: User Operational Availability -** System availability exclusive of planned downtime shall be 99.9% for the Tier I production systems as defined in the Hosting Scope document. System availability exclusive of planned downtime shall be 99.9% for the HA-CAS production systems as defined in the Hosting Scope document. HealtheIntent components required for data migration and continuity of care shall have the same SLA and penalties as Tier I production systems as defined in the Hosting Scope document.	***No change required.***
JM9	Jon Manis	Contractually, I would strongly recommend all system performance be the responsibility of Cerner. In other words, all ancillary systems and interfaces, data exchanges should be assigned to Cerner for performance accountability. In my experience, an EMR vendor often places accountability on a sub-system or ancillary system for poor performance. It is best to have one vendor responsible for assuring everything works together as expected. This is often accomplished by ancillary systems sub-contracting through the prime vendor (Cerner).	Cerner is responsible for all performance for the new EHR and ancillary systems they are providing, as well as the interface design and implementation. **See SLA responses to JM12&13.** **IDIQ 5.5.3 EHRM and VA System Integration** The Contractor shall identify common VistA interfaces required for all EHRM deployment sites with input from VA. This shall include currently deployed interfaces identified in Section D, Attachment 004 as well as those which VA develops or procures during the performance of this contract. The Contractor shall support all development, documentation including interface control documents, compliance reviews and test activities required by VA to integrate these internal and external systems as required. Integration activities may include, but are not limited to: a) Existing VistA integrations to external or internal support systems b) Community Care Clinics – including medical documentation required for provider payment if provided in electronic format. c) Medical Devices – Internal and External d) Mobile Apps / Mobile Devices – Internal and External e) CMOPs The Contractor shall modify VA legacy systems as required to support integration with EHRM provided that VA will collaborate with the Contractor to share knowledge of the VA legacy systems to support the integration with EHRM. In addition, the Contractor shall provide technical expertise to VA and its Contractors to support integration with EHRM of Commercial software as required. Note that site-specific system interface and legacy system modification may be required as site requirements are identified during deployment. VA will provide access to VA's enterprise InterSystems HealthShare licenses for development of EHRM/VistA interfaces. The Contractor shall provide interface testing. Tests include steps for nominal and off-nominal interface conditions, minimum and maximum data content, and error handling as outlined in the respective ICD. Data will be verified on each end of the interface to confirm that the correct data is transmitted from EHRM and the data received by EHRM is stored and displayed correctly. Data verification will be automated wherever possible. Finally, [the Contractor shall] provide VA the ability to audit all interface traffic that occurs during testing. For any new code or code modifications to VA systems by the Contractor, the Contractor shall provide the software build/package including source code and required documentation for release within VA and use the VA approved tool/software code repository which is the Rational tool suite. The Contractor shall change to the new VA code repository if VA transitions from Rational to an internal VA GitHub repository. For such modifications to VA legacy systems, the Contractor shall create, maintain, and provide the architecture/system diagrams with input from VA for the EHRM and VA systems integration using the DOD Architecture Framework (DoDAF). To the extent applicable, provide non-commercial and Open Source Software (OSS) source code to support the configuration, integration, custom development, test, software management, training, deployment, and end-user usage of custom developed components of EHRM.	***No change required***
JM10	Jon Manis	I have many questions about medical imaging. Cerner is not known to have the best imaging solutions. Given the VA patient population, this area should be reviewed with a particular interest to protect VA interest. I would include specific performance clauses related to imagine capture, storage, retrieval, resolution and exchange for both medical and diagnostic imaging.	VA has not included the Cerner PACS module in this acquisition due to similar concerns. Also see response to JM17.	***No change required.***
JM11	Jon Manis	I did not see specific reference to Population Health Management tools or predictive analytical modules to support specific patient populations (i.e.; chronic disease such as diabetes).	**IDIQ PWS Section 5.8: BUSINESS INTELLIGENCE,DATA ANALYTICS, AND POINT OF CARE DECISION SUPPORT.** This section covers a lot of related topics including: g) Provide the ability to provision and maintain data marts around specific clinical or administrative subject areas and utilize provided reporting and analytic tools to report and analyze the data	***No change required.***

JM12	Jon Manis	Some contingency should be made for hardware performance measurement (processing and response times) with regard to assigned accountability. If the system is underperforming, who is accountable to remediate? How quickly?	Cerner is providing a managed hosting service and their LightsOn Monitoring to VA. **NOTE:** There is a separate Cerner Hosting Scope of Work document that is not a part of the RFP but will be incorporated in the final contract language. Specific hardware performance and remediation procedures are described in that document including the provision of near-real time views into system capacity, performance, and user device latency on both a snapshot and trend view. System availability,performance and functional capability issues are handled as an incident with resolution time frames specified by the criticality of each incident. Detailed metrics will be included in task orders describing hosting and help desk requirements.	***No change required.***
JM13	Jon Manis	I did not see and could not find specific mention of service level agreements regarding response times.	VA and DoD will be sharing an instance of the commercial Cerner product based in the Cerner data center conforming to Cerner commercial service level agreements. Note that specific service level agreements will be determined for each task order. **IDIQ PWS section 5.3.3 System Quality and Performance Measures and Monitoring** The Contractor shall provide its commercial performance measurement system for system acceptance for discussion and review with VA. The Contractor shall conduct analysis and design activities for system quality and performance. The Contractor shall provide performance and availability trend analysis and supporting data in the Monthly Progress Report to show prediction, trending, and monitoring of system's performance trends. The Contractor is responsible for reporting all issues or errors associated with the EHR solution, and acknowledges and agrees that software errors creating patient safety risks shall not be considered confidential, proprietary or trade secrets, and accordingly, shall be releasable to VA or its agents. The VA retains the right to share any issue, error or resolution approach related to software errors creating patient safety risks. **Quality Assurance Surveillance Plan Appendix A-1: EHRM Functional Key Performance Indicators** includes over 120 areas of clinical measurement along with specific detail on VA priorities and Cerner Lights On measurement capabilities. These metrics will be included as appropriate in each task order with VA surveillance on Cerner performance against these metrics. **Quality Assurance Surveillance Plan Appendix A-2: EHRM Non-Functional Key Performance Indicators** includes 20 areas of technical measurement along with critical success factors and suggested numerical measures. These metrics will be included as appropriate in each task order with VA surveillance on Cerner performance against these metrics.	***No change required.***
JM14	Jon Manis	I did not see and could not find specific mention of service level agreements regarding disaster recovery, backup, contingency or business/service continuity.	**IDIQ PWS section 5.3.2 Continuity of Operations (COOP), Disaster Recovery (DR), and Business Continuity Planning Services.** **IDIQ PWS section 5.3 Hosting** requires: c) Provide a primary and alternate data center to support continuity of operations and disaster recovery requirements. **VA -FR-19**: **Manage Clinical Documentation:** Includes the ability to create, modify, authenticate and ensure continuity of record with fail over and disaster recovery. **NOTE:** There is a separate Cerner Hosting Scope of Work document that is not a part of the RFP but will be incorporated in the final contract language. Specific service level agreements related to disaster recovery, backup, contingency and business/service continuity have been negotiated with Cerner to ensure VA requirements are met.	***No change required.***
JM15	Jon Manis	I did not see sufficient detail related to the incorporation of emerging technologies such as self-service, remote monitoring and telehealth solutions. I would include artificial intelligence (AI) as a clause as well.	**VA-FR-23 Manage Remote Care:** Provides the ability to interact with patients and providers, provide care, treatment, and education to the patient population unable to physically present at a VA medical facility. Includes the ability to support coordinated, bi-directional patient /provider and provider/provider communications electronically in a secure manner. Includes connected care modalities of telehealth, remote home monitoring, point of service kiosks, mobile applications/tools. Includes the ability to customize the patient portal and associated mobile applications with VA-specific content, branding and transactional services such as healthcare enrollment application, Veteran profile update, claim status and other VA services. **VA-FR-23: Remote access:** Provides the ability to interact with patients and providers, provide care, treatment, and education to the patient population unable to physically present at a VA medical facility. Includes the ability to support coordinated, bi-directional patient /provider and provider/provider communications electronically in a secure manner. Includes connected care modalities of telehealth, remote home monitoring, point of service kiosks, & mobile applications/tools. **IDIQ PWS Section 5.10.2: Innovation Categories:** includes significant detail covering future-facing development. Specifically: d) An extension of the EHRM using either Contractor-dependent or independent technology. An example of an extension includes a new application such as a growth chart application or medication adherence application. An independent application may use Fast Healthcare Interoperability Resources (FHIR) and a SMART container to visualize the application in the EHRM. An example of a Contractor-dependent innovation is a similar application that leverages Contractor proprietary objects-oriented technologies and APIs to connect the application to the EHRM. The Task Order will describe the specific requirements of Contractor to sustain the extension. An extension will typically be owned by Contractor and licensed to the VA with unlimited rights and subsequently made available under an open source license such as APACHE, Version 2. e) An open innovation is a foundational, platform independent technology that may be utilized with Contractor solutions but has independent value outside of Contractor's platforms. Examples include Cerner terminologies, ontologies, methods of developing healthcare IT content, standards processes and rules, for example, such as those employed to program Cerner's population health solutions. Open innovation Intellectual Property (IP) will be committed to an open source community or public domain, as appropriate and mutually agreed to in a Task Order, by Contractor and the VA when such open innovation IP is necessary to realize a standardized implementation of platform-independent healthcare IT content. f) A joint contribution is an innovation created and developed by Contractor and the VA. If the VA is not contributing funds, then a CRADA may be negotiated to facilitate the Joint Contribution in coordination with the VA Technology Transfer Program (TTP). The VA may receive consideration in the form of software allowances, future licensing discounts, or other remuneration, according to parameters and amounts previously agreed by the Innovations Governance Board as documented in a written agreement subsequently incorporated into this contract or one of its Task orders, and joint inventors of patented inventions may receive royalties in these arrangements in accordance with patent license agreements to be established that are consistent with Contract Clause I.XXX, Patent Rights – Ownership by the Contractor, FAR 52.227-12, (DEC 2007). If the VA is also contributing funds, then an alternative cooperative development agreement may be required for Joint Contributions. Joint Innovations made in concert with the DoD may be developed under an Other Transaction Authority (OTA) agreement. g) A knowledge sharing innovation is a contribution to a standards organization or consortium to advance the knowledge set of the industry at large. Examples include contributions made to the ONC as part of the Direct Project or the CommonWell Health Alliance.	***No change required.***

JM16	Jon Manis	Ideally, the Cerner instance should be "cloud first, mobile always." Is this the technical configuration? Has that been defined in the contract? Is there an upgrade or migration path in the contract?	VA will be sharing a hosting with DoD which is currently hosted in the Cerner data center. Mobile and eventual cloud migration are both addressed in the IDIQ PWS. **IDIQ PWS 5.2.1.1: Software Requirements j):** The EHRM solution shall support broad access via tablet or mobile devices and pursue technology to reduce the burden to the clinicians (e.g., providing third-party provider access to information using light-weight portals and support for future generation mobile devices). Platform specifics shall be adjudicated by joint governance and incorporated by VA at a TO level. **IDIQ PWS 5.3 EHRM HOSTING AND MANAGED SERVICES** The Contractor shall provide enterprise datacenter hosting and services consistent with the hosting requirements set forth in Contractor's Hosting Agreement. If a cloud hosting environment becomes a more viable solution over the Period of Performance, Cerner may migrate the joint DoD/VA hosting environment to a Cerner private cloud or external third party cloud upon concurrence and security validation from the joint DoD/VA governance authority.	***No change required.***
JM17	Jon Manis	A Vendor Neutral Archive (VNA) should be defined for all image types (DICOM/NON-DICOM) as well as all other media content (digital images, video, 3D images, waveforms, etc.	**PWS IDIQ 5.3.6.1: 5.3.6.1 Image Hosting** To support the transition to the EHRM Vendor Neutral Archive (VNA) for imaging, the Contractor shall migrate all DICOM and non-DICOM images from each VISN or site into the EHRM VNA at the time of deployment to each VISN or site.	***No change required.***

5.10.4 Seamless Interoperability / Joint Industry Outreach

The Contractor is required to collaborate with VA affiliates, community partners, EHR providers, healthcare providers, and vendors to advance seamless care throughout the health care provider market. Seamless care will require the creation of an integrated inpatient and outpatient solution with software components that have been designed, integrated, maintained, and deployed with a design architecture that allows for access to and sharing of common data and an enabling security framework that supports end-to-end healthcare related clinical and business operations. Seamless care is the experience patients and providers have moving from task to task and encounter to encounter within or between organizations such that high-quality decisions form easily and complete care plans execute smoothly. Information systems support the seamless-care experience by gathering data, interpreting data, presenting information, and managing tasks. Currently, industry lacks specific and uniform interoperability standards to support seamless care between organizations that employ different EHR systems. The Requirements Traceability Matrix Section D, Attachment 003, sets forth specific Informatics and Interoperability contract requirements. To accomplish this, the Contractor shall provide software and services to enable seamless care between VA encounters, encounters with other Government healthcare institutions, and outside entities through advancements in all areas of the EHR that occur. In addition, the software and services shall support the VA designated standards, such as SMART on FHIR and SMART-enabled applications, or other published standards.

The objective of these interoperability solutions is to advance the state of the art supporting seamless care for Veterans. Existing organizations promoting interoperability among EHR vendors, such as The Argonaut Project, have developed or are planning to develop technology standards or technical approaches that may support the EHRM seamless care strategy. To the extent that underlying third party technology is available or made available to meet the following timelines, the following interoperability software solutions and services shall be delivered under this section:

a) By Initial Operating Capability (IOC), the Contractor shall provide a software solution enabling VA, DoD and community providers who have connected to the EHRM to share interactive care plans (ICPs) for Veterans. ICPs will enable collaborative communication between providers, and between providers and Veterans, in managing Veteran care.

b) Within 24 months of applicable task order award, the Contractor shall provide a software solution enabling VA, DoD and connected community providers to complete referral management activities for Veterans.

c) By IOC, the Contractor shall provide a software solution enabling VA to release and consume, via on-demand access, a Veteran's complete longitudinal health record to and from DoD and connected community partners, irrespective of which EHR they use, provided such EHR technology is certified by the Health and Human Services Office of the National Coordinator (ONC) or its successor. The longitudinal record solution shall support Provider-to-Provider record sharing, as well as Provider-Veteran-Provider sharing (Veteran mediated record sharing), including appropriate consent management. The bi-directional health information exchange shall maximize use of discrete data that supports context-driven clinical decisions and informatics.

d) Within 24 months of applicable task order award, the Contractor shall provide a software solution enabling connected VA, DoD and community providers connected to the EHRM to send and receive Admission/Discharge/Transfer notifications "pushed" from the provider initiating a Veteran care event to enable proactive engagement by VA care coordinators when notified of a Veteran care event.

e) Within 24 months of applicable task order award, the Contractor will demonstrate a solution for identification and management of Veterans at high risk of suicide, in collaboration with community partners.

f) By IOC, the contractor shall provide URL based image access to the VA, community and academic partner systems who can support the URL and a viewer to the providers via the health information exchange networks. Within 36 months of applicable task order award, the Contractor shall provide a software solution enabling VA, DoD and community providers connected to the EHRM to have nationwide access to Veterans' imaging associated with diagnostic tests.

g) By IOC, the Contractor shall provide a software solution for multilateral standards-based ingestion, normalization, storage, and exporting of Health Information Exchange acquired Veteran health information. The Contractor shall ensure that the solution provides a computable dataset for purposes of population health and research analytics, clinical decision support, and workflow integration.

h) By IOC, the Contractor shall provide the capability to connect and exchange VA electronic health records via other interoperable networks, such as. eHealth Exchange, CareQuality, CommonWell Health Alliance, DirectTrust, National Association for Trusted Exchange by supporting their specifications, security and content specifications. Contractor shall support network record locator services and patient provider associations as applicable in accordance with applicable technical standards and the Trusted Exchange Framework and Common Agreement (TEFCA).

i) By IOC, the Contractor shall provide a capability for provider collaboration via secure e-mail using the ONC Direct protocol or future VA-designated standard within a Cerner Millennium EHR workflow context.

j) Within 36 months of applicable task order award, the Contractor shall provide a solution for a Software Development Kit (SDK) enabling standards-based applications (e.g., SMART, FHIR, etc.) integrated with EHRM solutions and platforms.

k) Cerner shall deliver annually an Interoperability Plan to the VA on how it intends to meet the objectives established in PWS section 5.10.4. The initial plan will be due within 3 months of applicable TO award.

l) The Contractor shall conduct an annual Interoperability Self-Assessment against standards that shall be specified by VA, such as those promulgated by HIMSS or future standards to be identified by VA. The annual self assessment shall report on the state of each data element (e.g., which are supported in what capacities and in which formats). This will help assure standards implementation consistency and assure standards compliance with evolving national standards.

m) The Contractor shall support Knowledge Interoperability by supporting the extension of clinical content assets such as terminologies, clinical decision support rules, and order sets, etc., to the extent such extensions are consistent with the model and best practices of the controlling national standard. This includes the ability to curate, extend, and share that knowledge with clinical partners. This fosters rapid adoption from industry best practices, e.g., clinical professional societies.

5.10.4.1 Data Design and Information Sharing

In support of the interoperability objectives under this Section, agreed upon Contractor proprietary information/data model extension points (e.g., ingestion and record APIs) may be provided to both international and national standards designating organizations as described and set forth in an applicable Task Order. The Contractor shall provide VA access and usage rights into any underlying proprietary terminology/code systems for the purpose of enhancing national standards to address any gaps identified in the EHRM solution. The Contractor shall also make the interoperability capabilities and product enhancements developed under this contract available to non-VA Cerner clients.

5.10.4.2 VA Digital Health Platform/Digital Veterans Platform Integration
VA anticipates developing a Digital Health Platform/Digital Veterans Platform (DVP) to consolidate critical VA EHR and non-EHR operational systems. The Contractor shall integrate the EHRM to interoperate with DVP, or future state VA platform, including the DVP API gateway or any other method designated by VA.

EHRM External RFP Review Matrix

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RS1	Rasu Shrestha	Enterprise Imaging • It's important to protect the VA's clinical, IT and operational needs around imaging. Cerner's imaging suite is not the best in class, and there are several key components that need to be called out, to make sure that if the current stack does not meet clinical, operational or IT requirements, the VA is protected. • As an example, if in user testing and clinical validation, it is found that the solutions offered are sub-par, then perhaps there should be an option to bring in the best in class solution/s contracted through Cerner. • Current and future functionality for enterprise imaging should be broken down into these core components: o Capture o Storage o Viewing o Interoperability/Image Exchange o Analytics • Furthermore, imaging should sufficiently address needs across: o radiology o cardiology o pathology o others: wound care, dermatology, ophthalmology, endoscopy, point of care ultrasound. • I had helped pull together a brief white paper that outlines key enterprise imaging measurement, functionality and 'keys to success' working with several other key imaging informatics experts and KLAS Research. I have attached this document here for your reference. o It details out specific requirements for each of the core verticals above in 2 stacks: current functionality and future functionality.	**VA-FR-14: Provide Radiology and Nuclear Medicine Services:** VA is not purchasing the Cerner PACS module due to concerns similar to those expressed by Rasu. VA is requiring Cerner to provide imaging storage in a Vendor Neutral Archive. Therefore, these issues are addressed through reliance on the existing VA imaging capabilities.	***No change required.***
RS2	Rasu Shrestha	• Additional comments o For storage, it will be important to make sure that the Vendor Neutral Archive (VNA) is defined for both DICOM and non-DICOM image types (these seem to be mentioned already), as well as other multimedia content, such as movies, waveforms, and "omics" data (e.g. genomics, proteomics etc.). o A desirable feature is to have the VNA grow into an enterprise clinical content management system, that has three basic layers: □ a storage layer that is standards based and cloud deployable □ an intelligent middle-ware layer atop of the storage layer that has the core meta-data components enabling full interoperability (PIX, PDQ, IHE) □ a workflow layer atop the middle-ware layer that allows for an ecosystem of various viewers and applications o The objective would then be a "capture once, store once, access infinite times" with defined SLAs and performance metrics o Also, please make sure that there is mention of a functional "zero-foot print viewing" (ZFP) capabilities. o I also did not see direct mention of image post processing tools and functionalities (e.g. 3D imaging, computer added detection/CAD, etc.)	**PWS IDIQ 5.3.6.1: 5.3.6.1 Image Hosting** To support the transition to the EHRM Vendor Neutral Archive (VNA) for imaging, the Contractor shall migrate all DICOM and non-DICOM images from each VISN or site into the EHRM VNA at the time of deployment to each VISN or site. **Cerner response to follow-up on VNA architecture:** *Cerner's Archive for MultiMedia is a single, enterprise-wide archive that aligns with Millennium. This is a single instance that is considered a part of the EHR architecture, (e.g. every Cerner Millennium client has a CAMM archive). Cerner also includes on-site iCache services that store the most recent or needed multimedia to ensure workflow performance is optimized.* Cerner also provided an architecture description of the VNA which was reviewed by the VA architecture team and determined to be sufficient to address Rasu's comments. **Zero Footprint Viewing:** Discussions with CMO imaging representatives clarified that zero footprint viewing if VA imaging and VA monitor display capabilities and therefore not a part of the Cerner contract. **Image post-processing tools and functionalities:** Discussions with CMO imaging representatives clarified that image post processing is not within scope of the Cerner contract since VA is not purchasing the Cerner PACS module.	***No change required.***

RS3	Rasu Shrestha	• It will be important to make sure that there is robust data integration and performance across all sites	**IDIQ PWS section 5.1.8** - details on data migration planning including: The Contractor shall support data migration planning to support seamless care and to ensure operational integrity. **The Contractor shall:** a) Develop a Data Migration Plan (DMP) that provides an understanding of the EHRM Solution implementation sequence and priorities, data quality, data volumes, and data extract, transformation and load strategy for both the EHRM and Population Health Management solutions. **IDIQ PWS 5.9: 5.9 Analysis And Migration Of Legacy Data** The Contractor shall execute the following data migrations in alignment with the EHRM wave deployment schedule. Data migrations include: a) VA clinical data migrated to HealtheIntent – initially 15 domains b) Non-DICOM Images c) DICOM images i. Reference ii. Diagnostic quality **Additional migrations shall occur following the overall EHRM schedule:** a) Bulk VA data from HealtheIntent to Millennium – initially 5 domains i. Initially PAMPI: Problems, Allergies, Medications, Procedures, Immunization ii. Moving to PAMPI+ iii. DICOM imaging and imaged documents and other multi-media will not be included In the initial phases of migration. b) Iterative migration of remaining VistA clinical, dental, administrative and financial data that is relevant for clinical care, registries, reporting, or analytics to additional domains in HealtheIntent and/or Millennium Priorities will be determined by the Data Governance Board. c) Migration or archiving of remaining VistA data per direction of the Data Governance Board to enable retirement of VistA instances. The Contractor shall develop the data processing scripts including terminology mapping to standards and information model transformation. The Contractor shall migrate VistA legacy data into HealtheIntent utilizing a historical bulk load and an ongoing update stream during the deployment time period based upon the following process: a) VA will physically transport the historical load to the Cerner Data Center and restore onto an environment established for hosting VA data; b) VA will manage the ongoing update stream; c) The Contractor will ingest, aggregate, normalize and standardize the VA data into HealtheIntent and/or Millennium by a predetermined method.	***No change required.***	
RS4	Rasu Shrestha	• Are there specific clauses for SLAs around performance	VA and DoD will be sharing an instance of the commercial Cerner product based in the Cerner data center conforming to Cerner commercial service level agreements. Note that specific SLAs will be determined for each task order. **IDIQ PWS Section 5.3.3 System Quality and Performance Measures and Monitoring** The Contractor shall provide its commercial performance measurement system for system acceptance for discussion and review with VA. The Contractor shall conduct analysis and design activities for system quality and performance. The Contractor shall provide performance and availability trend analysis and supporting data in the Monthly Progress Report to show prediction, trending, and monitoring of system's performance trends. The Contractor is responsible for reporting all issues or errors associated with the EHR solution, and acknowledges and agrees that software errors creating patient safety risks shall not be considered confidential, proprietary or trade secrets, and accordingly, shall be releasable to VA or its agents. The VA retains the right to share any issue, error or resolution approach related to software errors creating patient safety risks. **Quality Assurance Surveillance Plan Appendix A-1: EHRM Functional Key Performance Indicators** includes over 120 areas of clinical measurement along with specific detail on VA priorities and Cerner Lights On measurement capabilities. These metrics will be included as appropriate in each task order with VA surveillance on Cerner performance against these metrics. **Quality Assurance Surveillance Plan Appendix A-2: EHRM Non-Functional Key Performance Indicators** includes 20 areas of technical measurement along with specific detail on critical success factors and suggested numerical measures. These metrics will be included as appropriate in each task order with VA surveillance on Cerner performance against these metrics.	***No change required.***	JM13
RS5	Rasu Shrestha	• Backup and disaster recovery clauses?	**IDIQ PWS section 5.3.2 Continuity of Operations (COOP), Disaster Recovery (DR), and Business Continuity Planning Services.** **IDIQ PWS section 5.3 Hosting requires:** c) Provide a primary and alternate data center to support continuity of operations and disaster recovery requirements. **VA -FR-19:** Includes the ability to create, modify, authenticate and ensure continuity of record with fail over and disaster recovery. **NOTE:** There is a separate Cerner Hosting Scope of Work document that is not a part of the RFP but will be incorporated in the final contract language. Specific service level agreements related to disaster recovery, backup, contingency and business/service continuity have been negotiated with Cerner to ensure VA requirements are met.	***No change required.***	JM14

RS6	Rasu Shrestha	• Cerner should essentially function as the primary workflow enablement layer, and would ideally be able to allow for data to flow freely across other clinical systems creating a robust 'healthcare operating system'	**IDIQ PWS Section 5.10.4: Seamless Interoperability / Joint Industry Outreach** includes significant detail on the topic. The interoperability section is copied below this table for reference. **IDIQ PWS section 5.5.4 Data Exchange - Application Program Interface (API) Gateway** also includes detail on the creation of strategic open APIs. **VA NF-177: Interoperability - Data Standards:** The system shall support the use of the health data standards identified in the VA DoD Health Information Technical Standards Profile and by the VA DoD Interagency Clinical Informatics board, including following common data standards: National Information Exchange Model NIEM; Health Level 7 HL7; Logical Observation Identifiers, Names and Codes LOINC; Systematized Nomenclature of Medicine SNOMED; RxNorm, MedRT, ICD, CPT, HCPCS, Veteran Information Model VIM; and Healthcare Information Technology Standards Panel HITSP as well as VA/DOD/IPO extensions to these standards. **VA-NF-T23: Informatics - Care Integrations:** VA must be able to seamlessly integrate with HIE and external-to-EHR shared services to provide for a seamless experience and to more effectively integrate in community care efforts, as well as with other parts of VA (e.g., identity management). This includes but is not limited to the EHR product ability to support external shared services (SOA services, such as identity management, care plan service, scheduling, etc.) accessed via standards-based APIs. (Process Continuity, Evolution, Extension) KSR5 [NOW +] **VA NF-Z11: Health Information Exchange:** The system shall support VA electronic exchange of health records via other interoperable networks (e.g. CareQuality, CommonWell Health Alliance, DirectTrust, National Association for Trusted Exchange) by supporting their specifications, security and content specifications	***No change required***
RS7	Rasu Shrestha	• There needs to be a robust data abstraction layer that is FHIR enabled - much of this is already mentioned in section 5.5	**IDIQ PWS Section 5.5.4: Data Exchange - Application Program Interface (API) Gateway includes significant detail including:** a) Deliver and maintain fully tested contractor API Endpoints that return data defined by Cerner or by the latest Cerner supported open standards such as FHIR **VANF-Z02: FHIR**: System shall support the generation of FHIR resources in multiple versions in parallel (e.g.: DTSU 1.0, DTSU V2.0)	***No change required.***
RS8	Rasu Shrestha	• We should account for all elements of data flow and workflow, including the following: o Patient engagement o patient entered data o data from remote devices and sensors o claims data/ payor data o data flow from existing solutions such as VistA o data flow across other EMRs including Epic, Allscripts etc. - to meet and exceed needs around the Veterans Access, Choice and Accountability act	**IDIQ PWS Section 5.10.4: Seamless Interoperability / Joint Industry Outreach** includes significant detail on the topic. The interoperability section is copied below this table for reference.	***No change required.***
RS8	Rasu Shrestha	• I would also like to dig deeper with you around advanced analytics, enterprise data warehousing, and enablement of artificial intelligence and machine learning type capabilities	**IDIQ PWS Section 5.10.2: Innovation Categories** includes significant detail covering future-facing development. Specifically: d) An extension of the EHRM using either Contractor-dependent or independent technology. An example of an extension includes a new application such as a growth chart application or medication adherence application. An independent application may use Fast Healthcare Interoperability Resources (FHIR) and a SMART container to visualize the application in the EHRM. An example of a Contractor-dependent innovation is a similar application that leverages Contractor proprietary objects-oriented technologies and APIs to connect the application to the EHRM. The Task Order will describe the specific requirements of Contractor to sustain the extension. An extension will typically be owned by Contractor and licensed to the VA with unlimited rights and subsequently made available under an open source license such as APACHE, Version 2. e) An open innovation is a foundational, platform independent technology that may be utilized with Contractor solutions but has independent value outside of Contractor's platforms. Examples include Cerner terminologies, ontologies, methods of developing healthcare IT content, standards processes and rules, for example, such as those employed to program Cerner's population health solutions. Open innovation Intellectual Property (IP) will be committed to an open source community or public domain, as appropriate and mutually agreed to in a Task Order, by Contractor and the VA when such open innovation IP is necessary to realize a standardized implementation of platform-independent healthcare IT content. f) A joint contribution is an innovation created and developed by Contractor and the VA. If the VA is not contributing funds, then a CRADA may be negotiated to facilitate the Joint Contribution in coordination with the VA Technology Transfer Program (TTP). The VA may receive consideration in the form of software allowances, future licensing discounts, or other remuneration, according to parameters and amounts previously agreed by the Innovations Governance Board as documented in a written agreement subsequently incorporated into this contract or one of its Task orders, and joint inventors of patented inventions may receive royalties in these arrangements in accordance with patent license agreements to be established that are consistent with Contract Clause I.XXX, Patent Rights – Ownership by the Contractor, FAR 52.227-12, (DEC 2007). If the VA is also contributing funds, then an alternative cooperative development agreement may be required for Joint Contributions. Joint Innovations made in concert with the DoD may be developed under an Other Transaction Authority (OTA) agreement. g) A knowledge sharing innovation is a contribution to a standards organization or consortium to advance the knowledge set of the industry at large. Examples include contributions made to the ONC as part of the Direct Project or the CommonWell Health Alliance.	***No change required***
RS9	Rasu Shrestha	Does the contract specify that this is a single instance shared by VA and DoD?	While the words 'single instance' do not appear in the contract, there are multiple references to 'single joint system', 'common system', etc. throughout the RFP as illustrated below. **IDIQ PWS Background Section:** EHRM is based on the electronic health record acquired by the Department of Defense known as the MHS GENESIS system, which is at its core, Cerner Millennium. The adoption of a single joint system between VA and DoD will allow all patient data to reside in a common system to have a seamless link between the DoD and VA. The DoD authorized system will be augmented to include additional functionality to meet VA requirements. Over time, the goal is the creation of an integrated inpatient and outpatient solution with software components that have been designed, integrated, maintained, and deployed with a design architecture that allows for access to and sharing of common data, common user interface, common workflows, common business rules, and common security framework that supports end-to-end healthcare related clinical and business operations.	***No change required.***

5.10.4 Seamless Interoperability / Joint Industry Outreach

The Contractor is required to collaborate with VA affiliates, community partners, EHR providers, healthcare providers, and vendors to advance seamless care throughout the health care provider market. Seamless care will require the creation of an integrated inpatient and outpatient solution with software components that have been designed, integrated, maintained, and deployed with a design architecture that allows for access to and sharing of common data and an enabling security framework that supports end-to-end healthcare related clinical and business operations. Seamless care is the experience patients and providers have moving from task to task and encounter to encounter within or between organizations such that high-quality decisions form easily and complete care plans execute smoothly. Information systems support the seamless-care experience by gathering data, interpreting data, presenting information, and managing tasks. Currently, industry lacks specific and uniform interoperability standards to support seamless care between organizations that employ different EHR systems. The Requirements Traceability Matrix Section D, Attachment 003, sets forth specific Informatics and Interoperability contract requirements. To accomplish this, the Contractor shall provide software and services to enable seamless care between VA encounters, encounters with other Government healthcare institutions, and outside entities through advancements in all areas of the EHR that occur. In addition, the software and services shall support the VA designated standards, such as SMART on FHIR and SMART-enabled applications, or other published standards.

The objective of these interoperability solutions is to advance the state of the art supporting seamless care for Veterans. Existing organizations promoting interoperability among EHR vendors, such as The Argonaut Project, have developed or are planning to develop technology standards or technical approaches that may support the EHRM seamless care strategy. To the extent that underlying third party technology is available or made available to meet the following timelines, the following interoperability software solutions and services shall be delivered under this section:

a) By Initial Operating Capability (IOC), the Contractor shall provide a software solution enabling VA, DoD and community providers who have connected to the EHRM to share interactive care plans (ICPs) for Veterans. ICPs will enable collaborative communication between providers, and between providers and Veterans, in managing Veteran care.

b) Within 24 months of applicable task order award, the Contractor shall provide a software solution enabling VA, DoD and connected community providers to complete referral management activities for Veterans.

c) By IOC, the Contractor shall provide a software solution enabling VA to release and consume, via on-demand access, a Veteran's complete longitudinal health record to and from DoD and connected community partners, irrespective of which EHR they use, provided such EHR technology is certified by the Health and Human Services Office of the National Coordinator (ONC) or its successor. The longitudinal record solution shall support Provider-to-Provider record sharing, as well as Provider-Veteran-Provider sharing (Veteran mediated record sharing), including appropriate consent management. The bi-directional health information exchange shall maximize use of discrete data that supports context-driven clinical decisions and informatics.

d) Within 24 months of applicable task order award, the Contractor shall provide a software solution enabling connected VA, DoD and community providers connected to the EHRM to send and receive Admission/Discharge/Transfer notifications "pushed" from the provider initiating a Veteran care event to enable proactive engagement by VA care coordinators when notified of a Veteran care event.

e) Within 24 months of applicable task order award, the Contractor will demonstrate a solution for identification and management of Veterans at high risk of suicide, in collaboration with community partners.

f) By IOC, the contractor shall provide URL based image access to the VA, community and academic partner systems who can support the URL and a viewer to the providers via the health information exchange networks. Within 36 months of applicable task order award, the Contractor shall provide a software solution enabling VA, DoD and community providers connected to the EHRM to have nationwide access to Veterans' imaging associated with diagnostic tests.

g) By IOC, the Contractor shall provide a software solution for multilateral standards-based ingestion, normalization, storage, and exporting of Health Information Exchange acquired Veteran health information. The Contractor shall ensure that the solution provides a computable dataset for purposes of population health and research analytics, clinical decision support, and workflow integration.

h) By IOC, the Contractor shall provide the capability to connect and exchange VA electronic health records via other interoperable networks, such as. eHealth Exchange, CareQuality, CommonWell Health Alliance, DirectTrust, National Association for Trusted Exchange by supporting their specifications, security and content specifications. Contractor shall support network record locator services and patient provider associations as applicable in accordance with applicable technical standards and the Trusted Exchange Framework and Common Agreement (TEFCA).

i) By IOC, the Contractor shall provide a capability for provider collaboration via secure e-mail using the ONC Direct protocol or future VA-designated standard within a Cerner Millennium EHR workflow context.

j) Within 36 months of applicable task order award, the Contractor shall provide a solution for a Software Development Kit (SDK) enabling standards-based applications (e.g., SMART, FHIR, etc.) integrated with EHRM solutions and platforms.

k) Cerner shall deliver annually an Interoperability Plan to the VA on how it intends to meet the objectives established in PWS section 5.10.4. The initial plan will be due within 3 months of applicable TO award.

l) The Contractor shall conduct an annual Interoperability Self-Assessment against standards that shall be specified by VA, such as those promulgated by HIMSS or future standards to be identified by VA. The annual self assessment shall report on the state of each data element (e.g., which are supported in what capacities and in which formats). This will help assure standards implementation consistency and assure standards compliance with evolving national standards.

m) The Contractor shall support Knowledge Interoperability by supporting the extension of clinical content assets such as terminologies, clinical decision support rules, and order sets, etc., to the extent such extensions are consistent with the model and best practices of the controlling national standard. This includes the ability to curate, extend, and share that knowledge with clinical partners. This fosters rapid adoption from industry best practices, e.g., clinical professional societies.

5.10.4.1 Data Design and Information Sharing

In support of the interoperability objectives under this Section, agreed upon Contractor proprietary information/data model extension points (e.g., ingestion and record APIs) may be provided to both international and national standards designating organizations as described and set forth in an applicable Task Order. The Contractor shall provide VA access and usage rights into any underlying proprietary terminology/code systems for the purpose of enhancing national standards to address any gaps identified in the EHRM solution. The Contractor shall also make the interoperability capabilities and product enhancements developed under this contract available to non-VA Cerner clients.

5.10.4.2 VA Digital Health Platform/Digital Veterans Platform Integration

VA anticipates developing a Digital Health Platform/Digital Veterans Platform (DVP) to consolidate critical VA EHR and non-EHR operational systems. The Contractor shall integrate the EHRM to interoperate with DVP, or future state VA platform, including the DVP API gateway or any other method designated by VA.

Item #	Author	Comment	Response	Modifications to RFP
LC1	Leslie Cooper	I reviewed the material you sent regarding the proposed VA EMR contract and statement of work. I have one area of concern regarding the interoperability of the system with community care providers. For the new VA EMR to efficiently serve patients, maximize safety and lower medical costs, medical records from the military, VA and community care providers under contract must be viewable in a seamless electronic format. The language of the contract and statement of work do not require this of the Cerner system. I reviewed the material you sent regarding the proposed VA EMR contract and statement of work. I have one area of concern regarding the interoperability of the system with community care providers. For the new VA EMR to efficiently serve patients, maximize safety and lower medical costs, medical records from the military, VA and community care providers under contract must be viewable in a seamless electronic format. The language of the contract and statement of work do not require this of the Cerner system. In my experience using 3 versions of the Cerner EMR, the records from outside providers are imported as a CCD or CCA file and labeled as “Outside Material” with no way to identify file content or correlate internal study results with similar outside studies. For example a fax with a coronary angiogram report and a colonoscopy report will be included in the same “Outside Material” file. The date on the Outside Material file is the date of entry into the Cerner EMR, with no relation to the date of the file contents. These results are neither indexed nor searchable. The effort required of providers to open and read all pages of each file is infeasible and therefore tests are needlessly repeated at substantial cost and risk to patients. I recommend that the VA EMR contract and statement of work be amended to require that a core interoperability strategy be operational at the time of initial EMR implementation. The amended contract and statement of work should specify that that all community care provider materials be indexed and searchable by specific diagnosis and test result, and that these results be linked to relevant parts of the internal VA records by date and medical discipline. For example, a coronary angiogram report at an outside facility performed in January 2018 should appear in the VA EMR under Cardiology Testing (nomenclature from Cerner Mayo installations) on the date of the study. Current operational examples of successful EMR interoperability at the level required include EPIC to EPIC data exchange or a proprietary intra-organization system used at Mayo Clinic called Synthesis. We would recommend that you utilize standards for this as promulgated by the Federal government (e.g., Meaningful Use 2015 edition, and the Trusted Exchange Framework and Common Agreement initiated by the Department of Health and Human Services) and by industry (e.g., the HL7 Fast Healthcare Interoperability Resource standards and industry-led Argonaut and SMART projects). This recommendation has been reviewed by Mayo Clinic leadership and we believe is consistent with other feedback you have received from Mayo Clinic experts.	**IDIQ PWS Section 5.10.4: Seamless Interoperability / Joint Industry Outreach:** includes significant detail and timeframes on the topic. The entire interoperability section is copied below this table for reference. The objective of these interoperability solutions is to advance the state of the art supporting seamless care for Veterans. Existing organizations promoting interoperability among EHR vendors, such as The Argonaut Project, have developed or are planning to develop technology standards or technical approaches that may support the EHRM seamless care strategy. To the extent that underlying third party technology is available or made available to meet the following timelines, the following interoperability software solutions and services shall be delivered under this section: **VA-NF-T46 Legal Discovery** The system shall support provenance (chain of custody or ownership) and pedigree (processing history how the data was produced or incorporated) and enable identification, collection, and production of data according to source, custody and ownership and display of data in business, logical, legal or physical models. **VA-FR-19: Manage Clinical Documents.** k. Includes the ability to upload graphs, color images, and drawings that are viewable in the EHR and integrated with applications to support comparison of examination findings over time. l. Include the ability to link scanned or other electronic documents to a specific document in the health record. m. Includes capturing VA and Non VA Community Based Services. **IDIQ PWS Section 5.5.1: Workflow Development and Normalization** j) The Contractor shall enable configuration of the application that supports external community data without requiring the clinician to go to special screens to see and use reconciled external data. By IOC entry, the Contractor shall support incorporation of the following external community data domains, including but not limited to these domains and sub-domains: • Problems • Allergies • Home Medications • Procedures - including associated reports and with appropriately filtered CPT codes • Immunizations • Discharge Summaries • Progress Notes • Consult Notes • History & Physicals • Operative Notes • Radiology and Diagnostic Reports (Into “Documentation” component) By IOC exit, the Contractor shall support incorporation of the following external community data domains, including but not limited to these domains and sub-domains: • Results o Labs - General- Pathology and Microbiology o Vitals • Radiology and Diagnostic Reports (Into “Diagnostic Report” component) • Images k) Provide the VA with an understanding of how all workflows will impact VA care coordination and management processes (e.g., incorporating community information) to improve Veteran-centric delivery. l) Within 36 months of the IDIQ award, provider workflows will be optimized to leverage discreet data domains listed in Section 5.5.1 j) using Clinical Decision Support hooks (CDS hooks) or other techniques to reduce clinician burden. **VA-NF-T18: Informatics - Data Reuse** VHA must be able to use clinical data collected at the point of care (e.g., exam rooms, patient's home) for clinical decision support and research regardless of the care site, clinic type, provider type (including patients) or data entry form employed. Clinical data elements must be collected in a standardized and consistent way across venues to facilitate reuse. (Data exchange, CDS, quality) SHB1 [NOW] **Note:** To clarify capabilities on faxing, Cerner has committed to providing Remote Report Distribution (RRD) which is the Cerner automated fax solution. In the cases of manual faxed documents Cerner ProVision Document Imaging (CPDI) supports a scanned document workflow. With these solutions, the VA will be able to attach documents to a patient's record at the person or encounter level with an associated document type, which will provide indexing to that content.	***No change required.***

5.10.4 Seamless Interoperability / Joint Industry Outreach

The Contractor is required to collaborate with VA affiliates, community partners, EHR providers, healthcare providers, and vendors to advance seamless care throughout the health care provider market. Seamless care will require the creation of an integrated inpatient and outpatient solution with software components that have been designed, integrated, maintained, and deployed with a design architecture that allows for access to and sharing of common data and an enabling security framework that supports end-to-end healthcare related clinical and business operations. Seamless care is the experience patients and providers have moving from task to task and encounter to encounter within or between organizations such that high-quality decisions form easily and complete care plans execute smoothly. Information systems support the seamless-care experience by gathering data, interpreting data, presenting information, and managing tasks. Currently, industry lacks specific and uniform interoperability standards to support seamless care between organizations that employ different EHR systems. The Requirements Traceability Matrix Section D, Attachment 003, sets forth specific Informatics and Interoperability contract requirements. To accomplish this, the Contractor shall provide software and services to enable seamless care between VA encounters, encounters with other Government healthcare institutions, and outside entities through advancements in all areas of the EHR that occur. In addition, the software and services shall support the VA designated standards, such as SMART on FHIR and SMART-enabled applications, or other published standards.

The objective of these interoperability solutions is to advance the state of the art supporting seamless care for Veterans. Existing organizations promoting interoperability among EHR vendors, such as The Argonaut Project, have developed or are planning to develop technology standards or technical approaches that may support the EHRM seamless care strategy. To the extent that underlying third party technology is available or made available to meet the following timelines, the following interoperability software solutions and services shall be delivered under this section:

a) By Initial Operating Capability (IOC), the Contractor shall provide a software solution enabling VA, DoD and community providers who have connected to the EHRM to share interactive care plans (ICPs) for Veterans. ICPs will enable collaborative communication between providers, and between providers and Veterans, in managing Veteran care.

b) Within 24 months of applicable task order award, the Contractor shall provide a software solution enabling VA, DoD and connected community providers to complete referral management activities for Veterans.

c) By IOC, the Contractor shall provide a software solution enabling VA to release and consume, via on-demand access, a Veteran's complete longitudinal health record to and from DoD and connected community partners, irrespective of which EHR they use, provided such EHR technology is certified by the Health and Human Services Office of the National Coordinator (ONC) or its successor. The longitudinal record solution shall support Provider-to-Provider record sharing, as well as Provider-Veteran-Provider sharing (Veteran mediated record sharing), including appropriate consent management. The bi-directional health information exchange shall maximize use of discrete data that supports context-driven clinical decisions and informatics.

d) Within 24 months of applicable task order award, the Contractor shall provide a software solution enabling connected VA, DoD and community providers connected to the EHRM to send and receive Admission/Discharge/Transfer notifications "pushed" from the provider initiating a Veteran care event to enable proactive engagement by VA care coordinators when notified of a Veteran care event.

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f) By IOC, the contractor shall provide URL based image access to the VA, community and academic partner systems who can support the URL and a viewer to the providers via the health information exchange networks. Within 36 months of applicable task order award, the Contractor shall provide a software solution enabling VA, DoD and community providers connected to the EHRM to have nationwide access to Veterans' imaging associated with diagnostic tests.

g) By IOC, the Contractor shall provide a software solution for multilateral standards-based ingestion, normalization, storage, and exporting of Health Information Exchange acquired Veteran health information. The Contractor shall ensure that the solution provides a computable dataset for purposes of population health and research analytics, clinical decision support, and workflow integration.

h) By IOC, the Contractor shall provide the capability to connect and exchange VA electronic health records via other interoperable networks, such as. eHealth Exchange, CareQuality, CommonWell Health Alliance, DirectTrust, National Association for Trusted Exchange by supporting their specifications, security and content specifications. Contractor shall support network record locator services and patient provider associations as applicable in accordance with applicable technical standards and the Trusted Exchange Framework and Common Agreement (TEFCA).

i) By IOC, the Contractor shall provide a capability for provider collaboration via secure e-mail using the ONC Direct protocol or future VA-designated standard within a Cerner Millennium EHR workflow context.

j) Within 36 months of applicable task order award, the Contractor shall provide a solution for a Software Development Kit (SDK) enabling standards-based applications (e.g., SMART, FHIR, etc.) integrated with EHRM solutions and platforms.

k) Cerner shall deliver annually an Interoperability Plan to the VA on how it intends to meet the objectives established in PWS section 5.10.4. The initial plan will be due within 3 months of applicable TO award.

l) The Contractor shall conduct an annual Interoperability Self-Assessment against standards that shall be specified by VA, such as those promulgated by HIMSS or future standards to be identified by VA. The annual self assessment shall report on the state of each data element (e.g., which are supported in what capacities and in which formats). This will help assure standards implementation consistency and assure standards compliance with evolving national standards.

m) The Contractor shall support Knowledge Interoperability by supporting the extension of clinical content assets such as terminologies, clinical decision support rules, and order sets, etc., to the extent such extensions are consistent with the model and best practices of the controlling national standard. This includes the ability to curate, extend, and share that knowledge with clinical partners. This fosters rapid adoption from industry best practices, e.g., clinical professional societies.

5.10.4.1 Data Design and Information Sharing

In support of the interoperability objectives under this Section, agreed upon Contractor proprietary information/data model extension points (e.g., ingestion and record APIs) may be provided to both international and national standards designating organizations as described and set forth in an applicable Task Order. The Contractor shall provide VA access and usage rights into any underlying proprietary terminology/code systems for the purpose of enhancing national standards to address any gaps identified in the EHRM solution. The Contractor shall also make the interoperability capabilities and product enhancements developed under this contract available to non-VA Cerner clients.

5.10.4.2 VA Digital Health Platform/Digital Veterans Platform Integration

EHRM External RFP Review Matrix

VA anticipates developing a Digital Health Platform/Digital Veterans Platform (DVP) to consolidate critical VA EHR and non-EHR operational systems. The Contractor shall integrate the EHRM to interoperate with DVP, or future state VA platform, including the DVP API gateway or any other method designated by VA.

EHRM External RFP Review Matrix

Item #	Author	Comment	Response	Modifications to RFP
SR1	Stephanie Reel	So far, I have no real concerns. However.... might you be able to help me find the place in the documents, if any, where we might be 'informing' Cerner of our expectations related to staff engagement in the assessment phase? Please allow me to share my only real concern (related to mistakes we made, and mistakes I hope The VA can avoid). Once our projects were launched for our deployment of Epic, we began to meet routinely with groups of users. As an example, we would meet with a group of our Oncology faculty, to define functional requirements that were specific to complex chemotherapeutic order sets and pathways. It would take hours, and hours, to 'get it right'. We would discuss areas of agreement, and areas of disagreement. We would describe the approach to resolving differences. Most folks would appreciate the need for compromise, but some specific requirements were assumed to be absolute. And folks were truly engaged, and optimistic. However, when the ultimate product was implemented, the 'absolute' items were sometimes missing. And although there were great explanations for the choices that had to be made, the end-users were sometimes stunned by what they perceived to be blatant disregard for their requirements, and often very disappointed. IN some cases, it took weeks (months?) to find a rational and reasonable solution – to a problem that no one anticipated. Is there a place where the VA (or the DoD) was able to document how this type of an assessment will likely work? Or other such components of the site assessment process?	Some of the responsibility for your concerns on staff engagement fall on VA's management of the project, and some falls on Cerner's change management and deployment process. That said, the RFP only addresses the Cerner side of the responsibility for this. Here are some of the sections in the IDIQ PWS where Cerner responsibility for workflows/change management/training are discussed . **Section 5.1 Project Management** (note this section is very high level, but includes requirements for Cerner to participate/plan/support many aspects of the project related to your question) Section 5.1.1: provide project management support of: communications, project change, organization change, and value Section 5.1.3: provide strategy and planning support of: workflows, training, change management, synchronization with DoD (which may have a big impact on VA and DoD user processes) Section 5.1.5: provide requirements and analysis support on : use cases, change management, business process modeling, workflow management, site-specific requirements Section 5.1.9: provide an implementation plan including discussion of deployment, training, and change management; emphasis on user role definitions; recommend change management activities; participate in business process re-engineering discussions; analyze Cerner workflows vs. VA workflows and provide recommendations on process re-engineering, change management and product configuration Section 5.1.11: Value reporting including reporting on clinical staff experience **Section 5.5: VA Enterprise EHRM Baseline Preparation** (this section has more details and is concerned with the enterprise level work that must be completed before the first deployment site can go live) Section 5.5.1: Workflow development and normalization : some language on configuration of workflows to meet VA-specific requirements; emphasis on configuration to improve clinician access to external data. Section 5.5.6: Training Plans and Materials: training plans and materials tailored to VA environment; includes tailoring to the localized business process and standard operating procedures by user role Section 5.5.7: Organizational Change Management: Lots of information here – probably the most pertinent to your comment. **Section 5.6: Wave Planning and Deployment:** (this section has some detail on the aspects of the deployment process focused on user understanding and input to the workflows being implemented) Section 5.6.2: VA Current Site Assessment: Identify site-specific risks/unique areas; fine-tune the user adoption strategy/categorize the level of clinical process change Section 5.6.3: Future State Review/Workflow Adoption: review of workflows/processes/clinical content with site personnel Section 5.6.4: Future state validation: Identify and implement workflow configurations required for the site. Section 5.6.9: Training; site specific training; focus on super user training Section 5.6.10: Go-Live Readiness Assessment: Mock go-live testing; simulate patient flow using patient scenarios; identify areas needing additional training or workflow practice before go-live Section 5.6.12: Pre-deployment Training: Role-based training 60 days prior to go-live with additional over-the-shoulder training 90 days after go-live. Section 5.6.13: Post-deployment support: includes assisting users with workflow support.	***No change required.***
SR2	Stephanie Reel	I have identified no significant issues. As you appropriately indicated, the document is the summary of thousands of hours of hard work and the contributions of many. And, more importantly, you are purchasing a product, not building a city. You have captured much of what I would expect to be included. To some degree, my concerns are related to the ability to ensure success or measure success, or identify success - or failure. I worry NOT that you haven't included the appropriate level of requirements, but that, in fact you have included them, but may not be able to ascertain the delivery of the requirements, or the satisfaction of the goals, or the realization of the deliverables. I am concerned that you may not have the appropriate governance processes in place, in partnership with the contractor, to accurately or comprehensively realize that you have, or have not, received what has been identified, or what is required, or what is expected. I see evidence of great expectations, but I can't seem to locate the methodology by which you will be able to ensure that your vendor has delivered what has been identified and the degree of quality that exists within the deliverable. Examples are throughout.... change management, workflow changes, enhancement to processes, culture change, safety, efficiencies, etc. Do you have crystal clear metrics today, to which you will be able to compare what the contractor is delivering? Do you have a way to reach an agreement with the contractor (arbitration) when the VA, the DoD, and the contractor disagree on the quality of the product or the deliverable? I would like to suggest that we explicitly document the process by	We have not defined many crystal clear metrics at the IDIQ level – primarily because the IDIQ covers so many different topics that would have different metrics attached to each: hosting, deployment, training, change management. Each of these will have metrics spelled out along with a Quality Assurance Surveillance Plan (describing how VA will monitor the metrics) tailored to each individual task order as they are issued. We do have high level metrics for system availability: 99.9%, and for Cerner to provide no less than the commercial service level agreement that is provided to all other customers. We also anticipate that metrics will change over the 10 year course of the contract as we become smarter about what to measure and how to declare success. So, as you stated, there are not many detailed metrics stated at the IDIQ level. However, there are is a lot of work well underway at VA to address your concerns – this work is not documented in the RFP since it is VA responsibility, and therefore not a Cerner contract item: (note that I don't have much detail for you on these activities since my focus is mostly on the contract with Cerner, and not on how VA will manage that contract) o Set up joint governance boards with the DoD o Set up enterprise VA governance over clinical workflows/configurations/and issue resolution o Set up VA local governance for each site deployment o Set up VA communication, site logistic and pre-deployment infrastructure upgrade teams o Document current VistA performance levels as a baseline o Develop value measurement processes o Create specific performance metrics for each task order: (e.g. 'definition of done' for deployment – what benchmarks have to be achieved before Cerner can leave the deployment site, user adoption rates? Clinician satisfaction? Successful independent testing? etc. – all this is a underway and incorporating lessons learned from the initial DoD implementation) VA and DoD will be sharing an instance of the commercial Cerner product based in the Cerner data center conforming to Cerner commercial service level agreements. Note that specific service level agreements will be determined for each task order. **IDIQ PWS section 5.3.3 System Quality and Performance Measures and Monitoring** The Contractor shall provide its commercial performance measurement system for system acceptance for discussion and review with VA. The Contractor shall conduct analysis and design activities for system quality and performance. The Contractor shall provide performance and availability trend analysis and supporting data in the Monthly Progress Report to show prediction, trending, and monitoring of system's performance trends. The Contractor is responsible for reporting all issues or errors associated with the EHR solution, and acknowledges and agrees that software errors creating patient safety risks shall not be considered confidential, proprietary or trade secrets, and accordingly, shall be releasable to VA or its agents. The VA retains the right to share any issue, error or resolution approach related to software errors creating patient safety risks. **Quality Assurance Surveillance Plan Appendix A-1: EHRM Functional Key Performance Indicators** includes over 120 areas of clinical measurement along with specific detail on VA priorities and Cerner Lights On measurement capabilities. These metrics will be included as appropriate in each task order with VA surveillance on Cerner performance against these metrics.	***No change required.***

		which we will all agree that the deliverables have been met, or the goals have been achieved, etc. Perhaps you would consider the creation of an external/internal executive committee that will review progress each month? Someway to ensure that the contractor isn't the one deciding unilaterally if the deliverables meet the requirements as stated in the work orders? Just thinking out loud??	**Quality Assurance Surveillance Plan Appendix A-2: EHRM Non-Functional Key Performance Indicators** includes 20 areas of technical measurement along with critical success factors and suggested numerical measures. These metrics will be included as appropriate in each task order with VA surveillance on Cerner performance against these metrics.	

5.10.4 Seamless Interoperability / Joint Industry Outreach

The Contractor is required to collaborate with VA affiliates, community partners, EHR providers, healthcare providers, and vendors to advance seamless care throughout the health care provider market. Seamless care will require the creation of an integrated inpatient and outpatient solution with software components that have been designed, integrated, maintained, and deployed with a design architecture that allows for access to and sharing of common data and an enabling security framework that supports end-to-end healthcare related clinical and business operations. Seamless care is the experience patients and providers have moving from task to task and encounter to encounter within or between organizations such that high-quality decisions form easily and complete care plans execute smoothly. Information systems support the seamless-care experience by gathering data, interpreting data, presenting information, and managing tasks. Currently, industry lacks specific and uniform interoperability standards to support seamless care between organizations that employ different EHR systems. The Requirements Traceability Matrix Section D, Attachment 003, sets forth specific Informatics and Interoperability contract requirements. To accomplish this, the Contractor shall provide software and services to enable seamless care between VA encounters, encounters with other Government healthcare institutions, and outside entities through advancements in all areas of the EHR that occur. In addition, the software and services shall support the VA designated standards, such as SMART on FHIR and SMART-enabled applications, or other published standards.

The objective of these interoperability solutions is to advance the state of the art supporting seamless care for Veterans. Existing organizations promoting interoperability among EHR vendors, such as The Argonaut Project, have developed or are planning to develop technology standards or technical approaches that may support the EHRM seamless care strategy. To the extent that underlying third party technology is available or made available to meet the following timelines, the following interoperability software solutions and services shall be delivered under this section:

a) By Initial Operating Capability (IOC), the Contractor shall provide a software solution enabling VA, DoD and community providers who have connected to the EHRM to share interactive care plans (ICPs) for Veterans. ICPs will enable collaborative communication between providers, and between providers and Veterans, in managing Veteran care.

b) Within 24 months of applicable task order award, the Contractor shall provide a software solution enabling VA, DoD and connected community providers to complete referral management activities for Veterans.

c) By IOC, the Contractor shall provide a software solution enabling VA to release and consume, via on-demand access, a Veteran's complete longitudinal health record to and from DoD and connected community partners, irrespective of which EHR they use, provided such EHR technology is certified by the Health and Human Services Office of the National Coordinator (ONC) or its successor. The longitudinal record solution shall support Provider-to-Provider record sharing, as well as Provider-Veteran-Provider sharing (Veteran mediated record sharing), including appropriate consent management. The bi-directional health information exchange shall maximize use of discrete data that supports context-driven clinical decisions and informatics.

d) Within 24 months of applicable task order award, the Contractor shall provide a software solution enabling connected VA, DoD and community providers connected to the EHRM to send and receive Admission/Discharge/Transfer notifications "pushed" from the provider initiating a Veteran care event to enable proactive engagement by VA care coordinators when notified of a Veteran care event.

e) Within 24 months of applicable task order award, the Contractor will demonstrate a solution for identification and management of Veterans at high risk of suicide, in collaboration with community partners.

f) By IOC, the contractor shall provide URL based image access to the VA, community and academic partner systems who can support the URL and a viewer to the providers via the health information exchange networks. Within 36 months of applicable task order award, the Contractor shall provide a software solution enabling VA, DoD and community providers connected to the EHRM to have nationwide access to Veterans' imaging associated with diagnostic tests.

g) By IOC, the Contractor shall provide a software solution for multilateral standards-based ingestion, normalization, storage, and exporting of Health Information Exchange acquired Veteran health information. The Contractor shall ensure that the solution provides a computable dataset for purposes of population health and research analytics, clinical decision support, and workflow integration.

h) By IOC, the Contractor shall provide the capability to connect and exchange VA electronic health records via other interoperable networks, such as. eHealth Exchange, CareQuality, CommonWell Health Alliance, DirectTrust, National Association for Trusted Exchange by supporting their specifications, security and content specifications. Contractor shall support network record locator services and patient provider associations as applicable in accordance with applicable technical standards and the Trusted Exchange Framework and Common Agreement (TEFCA).

i) By IOC, the Contractor shall provide a capability for provider collaboration via secure e-mail using the ONC Direct protocol or future VA-designated standard within a Cerner Millennium EHR workflow context.

j) Within 36 months of applicable task order award, the Contractor shall provide a solution for a Software Development Kit (SDK) enabling standards-based applications (e.g., SMART, FHIR, etc.) integrated with EHRM solutions and platforms.

k) Cerner shall deliver annually an Interoperability Plan to the VA on how it intends to meet the objectives established in PWS section 5.10.4. The initial plan will be due within 3 months of applicable TO award.

l) The Contractor shall conduct an annual Interoperability Self-Assessment against standards that shall be specified by VA, such as those promulgated by HIMSS or future standards to be identified by VA. The annual self assessment shall report on the state of each data element (e.g., which are supported in what capacities and in which formats). This will help assure standards implementation consistency and assure standards compliance with evolving national standards.

m) The Contractor shall support Knowledge Interoperability by supporting the extension of clinical content assets such as terminologies, clinical decision support rules, and order sets, etc., to the extent such extensions are consistent with the model and best practices of the controlling national standard. This includes the ability to curate, extend, and share that knowledge with clinical partners. This fosters rapid adoption from industry best practices, e.g., clinical professional societies.

5.10.4.1 Data Design and Information Sharing

In support of the interoperability objectives under this Section, agreed upon Contractor proprietary information/data model extension points (e.g., ingestion and record APIs) may be provided to both international and national standards designating organizations as described and set forth in an applicable Task Order. The Contractor shall provide VA access and usage rights into any underlying proprietary terminology/code systems for the purpose of enhancing national standards to address any gaps identified in the EHRM solution. The Contractor shall also make the interoperability capabilities and product enhancements developed under this contract available to non-VA Cerner clients.

5.10.4.2 VA Digital Health Platform/Digital Veterans Platform Integration

VA anticipates developing a Digital Health Platform/Digital Veterans Platform (DVP) to consolidate critical VA EHR and non-EHR operational systems. The Contractor shall integrate the EHRM to interoperate with DVP, or future state VA platform, including the DVP API gateway or any other method designated by VA.

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Item #	Author	Comment	Response	Modifications to RFP
MS1	Marc Sherman	I thought that Dr. Cooper made a good case for inserting specific definitions and standards on the meaning and use of "interoperability," especially since that term has as many meanings in the industry as those who speak it. It is so easy for the contractor to proceed down a design path using one definition or standard while the users will require a totally different standard. That runs the risk of not being discovered until later, perhaps even up to implementation, a very costly result. Perhaps a similar problem (a seemingly big problem) that the DOD implementation faces now where the users are rebelling. Unfortunately, if this "gap" in definition is not discovered until IOC, it will be very difficult and very expensive to fix (ala the DOD problem). I agree with Dr. Cooper, why not set the critical definitions and standards in the contract (PWS) now and eliminate the chance for any confusion or ambiguity. It will pay dividends later in terms of less arguments, better initial design, happier user community, less overall cost, better healthcare delivery, etc. Then, with the standard fully defined and set in the original PWS, the mock-up test will be much sooner in time and much more complete the first time, allowing the users to provide input sooner and better, eliminating costly design mistakes from the beginning. The user community can tell you today what is needed to accomplish this "next generation" system that will be a model for the country and the future of healthcare (as Ms. Reel envisioned on the call last night). Why would you not want to tell the contractor the specifics of that now, in fairness to them, the VA, the patients and healthcare, so they can proceed with that standard from day one or express any concerns they may have now instead of in the future after costly design has occurred? Why would you not want to be specific in the contract to prevent ambiguity? Dr. Shulkin pushed back on Dr. Cooper's view as already accomplished in the PWS and cited Section 5 (I believe he said section 5.1.1) of the PWS. Dr. Cooper, as a physician user and not a technician, deferred on the effectiveness of the existing contract language to others, but commented that the CIO of MAYO read the contract and also did not think it adequately contained the right defining language to set out unambiguous definitions and standard. I have read the contract again last night and happen to agree, or am missing it. If I am wrong, it would be useful for someone to point me in the right direction.	**IDIQ PWS 5.5.1: Workflow Development and Normalization:** j) The Contractor shall enable configuration of the application that supports external community data without requiring the clinician to go to special screens to see and use reconciled external data. By IOC entry, the Contractor shall support incorporation of the following external community data domains, including but not limited to these domains and sub-domains: • Problems • Allergies • Home Medications • Procedures - including associated reports and with appropriately filtered CPT codes • Immunizations • Discharge Summaries • Progress Notes • Consult Notes • History & Physicals • Operative Notes • Radiology and Diagnostic Reports (Into “Documentation” component) By IOC exit, the Contractor shall support incorporation of the following external community data domains, including but not limited to these domains and sub-domains: • Results o Labs - General - Pathology and Microbiology o Vitals • Radiology and Diagnostic Reports (Into “Diagnostic Report” component) • Images **IDIQ PWS Section 5.10.4: Seamless Interoperability / Joint Industry Outreach** includes significant detail on the topic. The interoperability section is copied below this table for reference. **IDIQ PWS section 5.5.4 Data Exchange - Application Program Interface (API) Gateway** also includes detail on the creation of strategic open APIs. **VA NF-177: Interoperability - Data Standards:** The system shall support the use of the health data standards identified in the VA DoD Health Information Technical Standards Profile and by the VA DoD Interagency Clinical Informatics board, including following common data standards: National Information Exchange Model NIEM; Health Level 7 HL7; Logical Observation Identifiers, Names and Codes LOINC; Systematized Nomenclature of Medicine SNOMED; RxNorm, MedRT, ICD, CPT, HCPCS, Veteran Information Model VIM; and Healthcare Information Technology Standards Panel HITSP as well as VA/DOD/IPO extensions to these standards. **VA-NF-T23: Informatics - Care Integration:** VA must be able to seamlessly integrate with HIE and external-to-EHR shared services to provide for a seamless experience and to more effectively integrate in community care efforts, as well as with other parts of VA (e.g., identity management). This includes but is not limited to the EHR product ability to support external shared services (SOA services, such as identity management, care plan service, scheduling, etc.) accessed via standards-based APIs. (Process Continuity, Evolution, Extension) KSR5 [NOW +] **VA NF-Z11: Health Information Exchange:** The system shall support VA electronic exchange of health records via other interoperable networks (e.g. CareQuality, CommonWell Health Alliance, DirectTrust, National Association for Trusted Exchange) by supporting their specifications, security and content specifications	***No change required.***
MS2	Marc Sherman	I was also thinking about the current reported problems of the DOD implementation seemingly caused by a user (clinician) revolt over inadequacy (or unsuitability) for their needs. The VA runs that same risk. Perhaps that problem could be a benefit to your effort. Why not accumulate all of the user complaints/issues in the DOD implementation identified by the users and chart them out. Then identify which of those issues would be issues if they existed in the VA implementation and include them in the contract as definitional requirements. You have the benefit of knowing the failures in the very system upon which you are modeling your system...and you have an added advantage and opportunity to contractually prevent similar mistakes.	VA has had frequent communication with DoD on lessons learned and incorporated that information throughout the contract. Topics incorporated include: - Management, tracking and reporting of trouble tickets - Emphasis on change management and training - Emphasis on in-person help desk support until 90 days after go-live - Language for additional training and on-site support in assignment of user roles - Tailoring of Cerner training to the workflows being implemented at each site - Require tailored training materials and tip sheets by user role - Ensure that training focuses on clinical workflows as well as technical aspects of the implementation - Language requiring a single Cerner POC for VA with authority over all activities supporting the VA solution regardless of the legal entity responsible for the support. Additionally, VA has incorporated DoD lessons learned in VA activities outside the Cerner contract. These include: - Set up joint governance boards with the DoD - Set up enterprise VA governance over clinical workflows/configurations/and issue resolution - Set up VA local governance for each site deployment - Set up VA communication, site logistic and pre-deployment infrastructure upgrade teams - Plans for a contracting 101 course to educate Cerner on staying within scope of each task order requirements.	***No change required.***

5.10.4 Seamless Interoperability / Joint Industry Outreach

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The objective of these interoperability solutions is to advance the state of the art supporting seamless care for Veterans. Existing organizations promoting interoperability among EHR vendors, such as The Argonaut Project, have developed or are planning to develop technology standards or technical approaches that may support the EHRM seamless care strategy. To the extent that underlying third party technology is available or made available to meet the following timelines, the following interoperability software solutions and services shall be delivered under this section:

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b) Within 24 months of applicable task order award, the Contractor shall provide a software solution enabling VA, DoD and connected community providers to complete referral management activities for Veterans.

c) By IOC, the Contractor shall provide a software solution enabling VA to release and consume, via on-demand access, a Veteran's complete longitudinal health record to and from DoD and connected community partners, irrespective of which EHR they use, provided such EHR technology is certified by the Health and Human Services Office of the National Coordinator (ONC) or its successor. The longitudinal record solution shall support Provider-to-Provider record sharing, as well as Provider-Veteran-Provider sharing (Veteran mediated record sharing), including appropriate consent management. The bi-directional health information exchange shall maximize use of discrete data that supports context-driven clinical decisions and informatics.

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e) Within 24 months of applicable task order award, the Contractor will demonstrate a solution for identification and management of Veterans at high risk of suicide, in collaboration with community partners.

f) By IOC, the contractor shall provide URL based image access to the VA, community and academic partner systems who can support the URL and a viewer to the providers via the health information exchange networks. Within 36 months of applicable task order award, the Contractor shall provide a software solution enabling VA, DoD and community providers connected to the EHRM to have nationwide access to Veterans' imaging associated with diagnostic tests.

g) By IOC, the Contractor shall provide a software solution for multilateral standards-based ingestion, normalization, storage, and exporting of Health Information Exchange acquired Veteran health information. The Contractor shall ensure that the solution provides a computable dataset for purposes of population health and research analytics, clinical decision support, and workflow integration.

h) By IOC, the Contractor shall provide the capability to connect and exchange VA electronic health records via other interoperable networks, such as. eHealth Exchange, CareQuality, CommonWell Health Alliance, DirectTrust, National Association for Trusted Exchange by supporting their specifications, security and content specifications. Contractor shall support network record locator services and patient provider associations as applicable in accordance with applicable technical standards and the Trusted Exchange Framework and Common Agreement (TEFCA).

i) By IOC, the Contractor shall provide a capability for provider collaboration via secure e-mail using the ONC Direct protocol or future VA-designated standard within a Cerner Millennium EHR workflow context.

j) Within 36 months of applicable task order award, the Contractor shall provide a solution for a Software Development Kit (SDK) enabling standards-based applications (e.g., SMART, FHIR, etc.) integrated with EHRM solutions and platforms.

k) Cerner shall deliver annually an Interoperability Plan to the VA on how it intends to meet the objectives established in PWS section 5.10.4. The initial plan will be due within 3 months of applicable TO award.

l) The Contractor shall conduct an annual Interoperability Self-Assessment against standards that shall be specified by VA, such as those promulgated by HIMSS or future standards to be identified by VA. The annual self assessment shall report on the state of each data element (e.g., which are supported in what capacities and in which formats). This will help assure standards implementation consistency and assure standards compliance with evolving national standards.

m) The Contractor shall support Knowledge Interoperability by supporting the extension of clinical content assets such as terminologies, clinical decision support rules, and order sets, etc., to the extent such extensions are consistent with the model and best practices of the controlling national standard. This includes the ability to curate, extend, and share that knowledge with clinical partners. This fosters rapid adoption from industry best practices, e.g., clinical professional societies.

5.10.4.1 Data Design and Information Sharing

In support of the interoperability objectives under this Section, agreed upon Contractor proprietary information/data model extension points (e.g., ingestion and record APIs) may be provided to both international and national standards designating organizations as described and set forth in an applicable Task Order. The Contractor shall provide VA access and usage rights into any underlying proprietary terminology/code systems for the purpose of enhancing national standards to address any gaps identified in the EHRM solution. The Contractor shall also make the interoperability capabilities and product enhancements developed under this contract available to non-VA Cerner clients.

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SH1	Stan Huff	Read and write of all patient specific data through FHIR APIs and services by [specific date] post signing a. Cerner progress on comprehensive support of FHIR has been slow. Only a few development resources are working on FHIR services. There should be timelines or at least a resource commitment of some kind to make sure continued development of FHIR resources is a priority.	**IDIQ PWS Section 5.10.4: Seamless Interoperability / Joint Industry Outreach** includes significant detail and timeframes on the topic. The entire interoperability section is copied below this table for reference. **IDIQ PWS section 5.5.4 Data Exchange - Application Program Interface (API) Gateway** also includes detail on the creation of strategic open APIs. **VA NF-177: Interoperability - Data Standards:** The system shall support the use of the health data standards identified in the VA DoD Health Information Technical Standards Profile and by the VA DoD Interagency Clinical Informatics board, including following common data standards: National Information Exchange Model NIEM; Health Level 7 HL7; Logical Observation Identifiers, Names and Codes LOINC; Systematized Nomenclature of Medicine SNOMED; RxNorm, MedRT, ICD, CPT, HCPCS, Veteran Information Model VIM; and Healthcare Information Technology Standards Panel HITSP as well as VA/DOD/IPO extensions to these standards. **VA-NF-T23: Informatics - Care Integration:** VA must be able to seamlessly integrate with HIE and external-to-EHR shared services to provide for a seamless experience and to more effectively integrate in community care efforts, as well as with other parts of VA (e.g., identity management). This includes but is not limited to the EHR product ability to support external shared services (SOA services, such as identity management, care plan service, scheduling, etc.) accessed via standards-based APIs. (Process Continuity, Evolution, Extension) KSR5 [NOW +] **VA NF-Z11: Health Information Exchange:** The system shall support VA electronic exchange of health records via other interoperable networks (e.g. CareQuality, CommonWell Health Alliance, DirectTrust, National Association for Trusted Exchange) by supporting their specifications, security and content specifications	***No change required.***
SH2	Stan Huff	Support for CDS hooks.	**IDIQ PWS 5.5.1: Workflow Development and Normalization:** Within 36 months of the IDIQ award, provider workflows will be optimized to leverage discreet data domains listed in Section 5.5.1 j) using Clinical Decision Support hooks (CDS hooks) or other techniques to reduce clinician burden. Discrete data domains referenced above: j) The Contractor shall enable configuration of the application that supports external community data without requiring the clinician to go to special screens to see and use reconciled external data. By IOC entry, the Contractor shall support incorporation of the following external community data domains, including but not limited to these domains and sub-domains: • Problems • Allergies • Home Medications • Procedures - including associated reports and with appropriately filtered CPT codes • Immunizations • Discharge Summaries • Progress Notes • Consult Notes • History & Physicals • Operative Notes • Radiology and Diagnostic Reports (Into "Documentation" component) By IOC exit, the Contractor shall support incorporation of the following external community data domains, including but not limited to these domains and sub-domains: • Results o Labs - General - Pathology and Microbiology o Vitals • Radiology and Diagnostic Reports (Into "Diagnostic Report" component) • Images	***No change required.***
SH3	Stan Huff	Support for an HL7 approved publish and subscribe (pub/sub) infrastructure and services.	**IDIQ PWS Section 5.5.4: Data Exchange - Application Program Interface (API) Gateway:** f) As it relates to FHIR, the Contractor shall provide an opportunity for joint collaboration in prioritization of the API roadmap. This support shall occur where VA data required maps to a FHIR (HL7 Fast Healthcare Interoperability Resources) resource that is currently in the FHIR Roadmap and not part of the software's out-of-the-box FHIR resource offerings **VA NF-177: Interoperability - Data Standards:** The system shall support the use of the health data standards identified in the VA DoD Health Information Technical Standards Profile and by the VA DoD Interagency Clinical Informatics board, including following common data standards: National Information Exchange Model NIEM; Health Level 7 HL7; Logical Observation Identifiers, Names and Codes LOINC; Systematized Nomenclature of Medicine SNOMED; RxNorm, MedRT, ICD, CPT, HCPCS, Veteran Information Model VIM; and Healthcare Information Technology Standards Panel HITSP as well as VA/DOD/IPO extensions to these standards.	***No change required.***
SH4	Stan Huff	Support model driven application development tools that use FHIR resources and profiles	**IDIQ PWS Section 5.5.4: Data Exchange - Application Program Interface (API) Gateway:** f) As it relates to FHIR, the Contractor shall provide an opportunity for joint collaboration in prioritization of the API roadmap. This support shall occur where VA data required maps to a FHIR (HL7 Fast Healthcare Interoperability Resources) resource that is currently in the FHIR Roadmap and not part of the software's out-of-the-box FHIR resource offerings i) Ensure Substitutable Medical Applications and Reusable Technologies (SMART) compliance to support SMART on FHIR applications. j) Provide standards-based API access (e.g. FHIR) to all patient data from the VA-designated authoritative data sources for the patient's record within the Contractors' product suite. **IDIQ PWS Section 5.10.4: Seamless Interoperability / Joint Industry Outreach** j) Within 36 months of applicable task order award, the Contractor shall provide a solution for a Software Development Kit (SDK) enabling standards-based applications (e.g., SMART, FHIR, etc.) integrated with EHRM solutions and platforms.	

SH5	Stan Huff	Support a “time drive” infrastructure and services.		***No change required.***
SH6	Stan Huff	Provide a terminology server that is compliant with the FHIR Terminology Module	**Note:** Cerner notes that it has the capability to return terminology in a FHIR resource request, but do not have a FHIR server for terminology lookup from outside today, since that is something that should be hosted by an outside group. Cerner proposes to work with Argonauts or the driving standards group to set up and additional server for lookup if needed. **IDIQ PWS Section 5.10.4: Seamless Interoperability / Joint Industry Outreach:** l) The Contractor shall conduct an annual Interoperability Self-Assessment against standards that shall be specified by VA, such as those promulgated by HIMSS or future standards to be identified by VA. The annual self assessment shall report on the state of each data element (e.g., which are supported in what capacities and in which formats). This will help assure standards implementation consistency and assure standards compliance with evolving national standards. m) The Contractor shall support Knowledge Interoperability by supporting the extension of clinical content assets such as terminologies, clinical decision support rules, and order sets, etc., to the extent such extensions are consistent with the model and best practices of the controlling national standard. This includes the ability to curate, extend, and share that knowledge with clinical partners. This fosters rapid adoption from industry best practices, e.g., clinical professional societies.	***No change required.***
SH7	Stan	Support a knowledge repository for all kinds of knowledge artifacts: CDS logic, FHIR profiles, order sets, workflows, etc.	**IDIQ PWS Section 5.10.4: Seamless Interoperability / Joint Industry Outreach:** g) By IOC, the Contractor shall provide a software solution for multilateral standards-based ingestion, normalization, storage, and exporting of Health Information Exchange acquired Veteran health information. The Contractor shall ensure that the solution provides a computable dataset for purposes of population health and research analytics, clinical decision support, and workflow integration.	***No change required.***
SH8	Stan Huff	Provide the ability for the VA to quickly change workflows. Currently, workflows are hard coded into the applications. It makes it nearly impossible to change workflows to accommodate changes in clinical practice.	VA is committed to setting an enterprise-level set of commonly shared workflows across VA and DoD wherever feasible. Joint VA/DoD governance boards as well as VA enterprise and local VAMC boards are being created to ensure that workflows are standardized as much as feasible and not customized to each implementation. That said, considerable configuration capabilities are included in the commercial product which can be used to adjust workflows without deviating from the commercial baseline.	***No change required.***
SH9	Stan Huff	Specify the time frame after a new version of FHIR is approved that Cerner will upgrade its services – one year?	Note: Cerner has prioritized an additional 40 engineers to accelerate FHIR APIs for VA in support of this contract. There is no specified timeframe for Cerner upgrades in response to new FHIR versions.	***No change required.***
SH10	Stan Huff	10. Support VA or other 3rd party defined FHIR profiles a. Use of FHIR profiles in model driven application development b. Ability to test conformance of an application to a specific set of FHIR profiles c. Services automatically test conformance to profiles in the Cerner FHIR services	**IDIQ PWS section 5.5.4 Data Exchange - Application Program Interface (API) Gateway:** includes detail on the creation of strategic open APIs. f) As it relates to FHIR, the Contractor shall provide an opportunity for joint collaboration in prioritization of the API roadmap. This support shall occur where VA data required maps to a FHIR (HL7 Fast Healthcare Interoperability Resources) resource that is currently in the FHIR Roadmap and not part of the software’s out-of-the-box FHIR resource offerings **VA NF-177: Interoperability - Data Standards:** The system shall support the use of the health data standards identified in the VA DoD Health Information Technical Standards Profile and by the VA DoD Interagency Clinical Informatics board, including following common data standards: National Information Exchange Model NIEM; Health Level 7 HL7; Logical Observation Identifiers, Names and Codes LOINC; Systematized Nomenclature of Medicine SNOMED; RxNorm, MedRT, ICD, CPT, HCPCS, Veteran Information Model VIM; and Healthcare Information Technology Standards Panel HITSP as well as VA/DOD/IPO extensions to these standards.	***No change required.***
SH11	Stan Huff	It is difficult to discern an overall architecture for the desired system. I think there is a danger that Cerner will just add more unmaintainable code (“bolt-on functionality”) to the existing spaghetti bowl to meet VA requirements, rather than creating a thoughtful new next-generation system. Would it be possible to add a diagram that would show a high level view of the future system with the relationship to external systems, etc.?	VA is committed to the acquisition of a commercial product - per the Secretary's testimony, VA does not want to be in the software development business. Therefore, VA does not want to dictate Cerner's future architecture, but rather rely on market forces to drive Cerner to create a competitive and efficient architecture.	***No change required.***
SH12	Stan Huff	I think several of the requirements listed in “003 – VA EHRM Non-Functional RTM (Amended 2.16.2018)” are unreasonable and/or infeasible.	All RTM requirements, both functional and non-functional have been negotiated with Cerner with the final language approved by both VA and Cerner.	***No change required.***

5.10.4 Seamless Interoperability / Joint Industry Outreach

The Contractor is required to collaborate with VA affiliates, community partners, EHR providers, healthcare providers, and vendors to advance seamless care throughout the health care provider market. Seamless care will require the creation of an integrated inpatient and outpatient solution with software components that have been designed, integrated, maintained, and deployed with a design architecture that allows for access to and sharing of common data and an enabling security framework that supports end-to-end healthcare related clinical and business operations. Seamless care is the experience patients and providers have moving from task to task and encounter to encounter within or between organizations such that high-quality decisions form easily and complete care plans execute smoothly. Information systems support the seamless-care experience by gathering data, interpreting data, presenting information, and managing tasks. Currently, industry lacks specific and uniform interoperability standards to support seamless care between organizations that employ different EHR systems. The Requirements Traceability Matrix Section D, Attachment 003, sets forth specific Informatics and Interoperability contract requirements. To accomplish this, the Contractor shall provide software and services to enable seamless care between VA encounters, encounters with other Government healthcare institutions, and outside entities through advancements in all areas of the EHR that occur. In addition, the software and services shall support the VA designated standards, such as SMART on FHIR and SMART-enabled applications, or other published standards.

The objective of these interoperability solutions is to advance the state of the art supporting seamless care for Veterans. Existing organizations promoting interoperability among EHR vendors, such as The Argonaut Project, have developed or are planning to develop technology standards or technical approaches that may support the EHRM seamless care strategy. To the extent that underlying third party technology is available or made available to meet the following timelines, the following interoperability software solutions and services shall be delivered under this section:

a) By Initial Operating Capability (IOC), the Contractor shall provide a software solution enabling VA, DoD and community providers who have connected to the EHRM to share interactive care plans (ICPs) for Veterans. ICPs will enable collaborative communication between providers, and between providers and Veterans, in managing Veteran care.

b) Within 24 months of applicable task order award, the Contractor shall provide a software solution enabling VA, DoD and connected community providers to complete referral management activities for Veterans.

c) By IOC, the Contractor shall provide a software solution enabling VA to release and consume, via on-demand access, a Veteran's complete longitudinal health record to and from DoD and connected community partners, irrespective of which EHR they use, provided such EHR technology is certified by the Health and Human Services Office of the National Coordinator (ONC) or its successor. The longitudinal record solution shall support Provider-to-Provider record sharing, as well as Provider-Veteran-Provider sharing (Veteran mediated record sharing), including appropriate consent management. The bi-directional health information exchange shall maximize use of discrete data that supports context-driven clinical decisions and informatics.

d) Within 24 months of applicable task order award, the Contractor shall provide a software solution enabling connected VA, DoD and community providers connected to the EHRM to send and receive Admission/Discharge/Transfer notifications "pushed" from the provider initiating a Veteran care event to enable proactive engagement by VA care coordinators when notified of a Veteran care event.

e) Within 24 months of applicable task order award, the Contractor will demonstrate a solution for identification and management of Veterans at high risk of suicide, in collaboration with community partners.

f) By IOC, the contractor shall provide URL based image access to the VA, community and academic partner systems who can support the URL and a viewer to the providers via the health information exchange networks. Within 36 months of applicable task order award, the Contractor shall provide a software solution enabling VA, DoD and community providers connected to the EHRM to have nationwide access to Veterans' imaging associated with diagnostic tests.

g) By IOC, the Contractor shall provide a software solution for multilateral standards-based ingestion, normalization, storage, and exporting of Health Information Exchange acquired Veteran health information. The Contractor shall ensure that the solution provides a computable dataset for purposes of population health and research analytics, clinical decision support, and workflow integration.

h) By IOC, the Contractor shall provide the capability to connect and exchange VA electronic health records via other interoperable networks, such as. eHealth Exchange, CareQuality, CommonWell Health Alliance, DirectTrust, National Association for Trusted Exchange by supporting their specifications, security and content specifications. Contractor shall support network record locator services and patient provider associations as applicable in accordance with applicable technical standards and the Trusted Exchange Framework and Common Agreement (TEFCA).

i) By IOC, the Contractor shall provide a capability for provider collaboration via secure e-mail using the ONC Direct protocol or future VA-designated standard within a Cerner Millennium EHR workflow context.

j) Within 36 months of applicable task order award, the Contractor shall provide a solution for a Software Development Kit (SDK) enabling standards-based applications (e.g., SMART, FHIR, etc.) integrated with EHRM solutions and platforms.

k) Cerner shall deliver annually an Interoperability Plan to the VA on how it intends to meet the objectives established in PWS section 5.10.4. The initial plan will be due within 3 months of applicable TO award.

l) The Contractor shall conduct an annual Interoperability Self-Assessment against standards that shall be specified by VA, such as those promulgated by HIMSS or future standards to be identified by VA. The annual self assessment shall report on the state of each data element (e.g., which are supported in what capacities and in which formats). This will help assure standards implementation consistency and assure standards compliance with evolving national standards.

m) The Contractor shall support Knowledge Interoperability by supporting the extension of clinical content assets such as terminologies, clinical decision support rules, and order sets, etc., to the extent such extensions are consistent with the model and best practices of the controlling national standard. This includes the ability to curate, extend, and share that knowledge with clinical partners. This fosters rapid adoption from industry best practices, e.g., clinical professional societies.

5.10.4.1 Data Design and Information Sharing

In support of the interoperability objectives under this Section, agreed upon Contractor proprietary information/data model extension points (e.g., ingestion and record APIs) may be provided to both international and national standards designating organizations as described and set forth in an applicable Task Order. The Contractor shall provide VA access and usage rights into any underlying proprietary terminology/code systems for the purpose of enhancing national standards to address any gaps identified in the EHRM solution. The Contractor shall also make the interoperability capabilities and product enhancements developed under this contract available to non-VA Cerner clients.

5.10.4.2 VA Digital Health Platform/Digital Veterans Platform Integration

VA anticipates developing a Digital Health Platform/Digital Veterans Platform (DVP) to consolidate critical VA EHR and non-EHR operational systems. The Contractor shall integrate the EHRM to interoperate with DVP, or future state VA platform, including the DVP API gateway or any other method designated by VA.

Item #	Author	Comment	Response	Modifications to RFP
AK1	Andrew Karson	Need a medical device registry	**VA-FR-05: Patient Tracking**: Includes the ability to track medical devices and instruments **VA-FR-10: Patient Treatment**: Includes the use of medical devices while treating the patient, Vital Signs (VS) machines, Intravenous (IV) pumps, electronic patient education, unit tracking boards, bed management systems; physiological devices, sitter monitoring, remote telemetry. **VA-FR-31: Manage Data**: Includes capture of right data, right format, and right time for automated data collection from medical devices. a. Includes ordering and managing chemotherapy b. Includes the ability to manage data elements from various entry points (e.g., internal/external/medical devices/patient generated) as appropriate for continuity of care, workload capture, **VA-FR40: Inventory Management/Supply chain operations**: Includes the ability to assign medical devices from all medical specialties to an electronic health record **VA-NF-T78: Critical Care:** Includes Critical Care - automated workflows and documentation supporting critical care multi-disciplinary teams; Device Connectivity - automated collection of medical data from medical devices to ensure right data, right format, right time.	***No change required.***

5.10.4 Seamless Interoperability / Joint Industry Outreach

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The objective of these interoperability solutions is to advance the state of the art supporting seamless care for Veterans. Existing organizations promoting interoperability among EHR vendors, such as The Argonaut Project, have developed or are planning to develop technology standards or technical approaches that may support the EHRM seamless care strategy. To the extent that underlying third party technology is available or made available to meet the following timelines, the following interoperability software solutions and services shall be delivered under this section:

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e) Within 24 months of applicable task order award, the Contractor will demonstrate a solution for identification and management of Veterans at high risk of suicide, in collaboration with community partners.

f) By IOC, the contractor shall provide URL based image access to the VA, community and academic partner systems who can support the URL and a viewer to the providers via the health information exchange networks. Within 36 months of applicable task order award, the Contractor shall provide a software solution enabling VA, DoD and community providers connected to the EHRM to have nationwide access to Veterans' imaging associated with diagnostic tests.

g) By IOC, the Contractor shall provide a software solution for multilateral standards-based ingestion, normalization, storage, and exporting of Health Information Exchange acquired Veteran health information. The Contractor shall ensure that the solution provides a computable dataset for purposes of population health and research analytics, clinical decision support, and workflow integration.

h) By IOC, the Contractor shall provide the capability to connect and exchange VA electronic health records via other interoperable networks, such as. eHealth Exchange, CareQuality, CommonWell Health Alliance, DirectTrust, National Association for Trusted Exchange by supporting their specifications, security and content specifications. Contractor shall support network record locator services and patient provider associations as applicable in accordance with applicable technical standards and the Trusted Exchange Framework and Common Agreement (TEFCA).

i) By IOC, the Contractor shall provide a capability for provider collaboration via secure e-mail using the ONC Direct protocol or future VA-designated standard within a Cerner Millennium EHR workflow context.

j) Within 36 months of applicable task order award, the Contractor shall provide a solution for a Software Development Kit (SDK) enabling standards-based applications (e.g., SMART, FHIR, etc.) integrated with EHRM solutions and platforms.

k) Cerner shall deliver annually an Interoperability Plan to the VA on how it intends to meet the objectives established in PWS section 5.10.4. The initial plan will be due within 3 months of applicable TO award.

l) The Contractor shall conduct an annual Interoperability Self-Assessment against standards that shall be specified by VA, such as those promulgated by HIMSS or future standards to be identified by VA. The annual self assessment shall report on the state of each data element (e.g., which are supported in what capacities and in which formats). This will help assure standards implementation consistency and assure standards compliance with evolving national standards.

m) The Contractor shall support Knowledge Interoperability by supporting the extension of clinical content assets such as terminologies, clinical decision support rules, and order sets, etc., to the extent such extensions are consistent with the model and best practices of the controlling national standard. This includes the ability to curate, extend, and share that knowledge with clinical partners. This fosters rapid adoption from industry best practices, e.g., clinical professional societies.

5.10.4.1 Data Design and Information Sharing

In support of the interoperability objectives under this Section, agreed upon Contractor proprietary information/data model extension points (e.g., ingestion and record APIs) may be provided to both international and national standards designating organizations as described and set forth in an applicable Task Order. The Contractor shall provide VA access and usage rights into any underlying proprietary terminology/code systems for the purpose of enhancing national standards to address any gaps identified in the EHRM solution. The Contractor shall also make the interoperability capabilities and product enhancements developed under this contract available to non-VA Cerner clients.

5.10.4.2 VA Digital Health Platform/Digital Veterans Platform Integration

EHRM External RFP Review Matrix

VA anticipates developing a Digital Health Platform/Digital Veterans Platform (DVP) to consolidate critical VA EHR and non-EHR operational systems. The Contractor shall integrate the EHRM to interoperate with DVP, or future state VA platform, including the DVP API gateway or any other method designated by VA.

EHRM External RFP Review Matrix

Item #	Author	Comment	Response	Modifications to RFP
All1	All	Need an interoperability sandbox/testbed	**5.10.4 Seamless Interoperability / Joint Industry Outreach** The Contractor is required to collaborate with VA affiliates, community partners, EHR providers, healthcare providers, and vendors to advance seamless care throughout the health care provider market. Seamless care will require the creation of an integrated inpatient and outpatient solution with software components that have been designed, integrated, maintained, and deployed with a design architecture that allows for access to and sharing of common data and an enabling security framework that supports end-to-end healthcare related clinical and business operations. Seamless care is the experience patients and providers have moving from task to task and encounter to encounter within or between organizations such that high-quality decisions form easily and complete care plans execute smoothly. Information systems support the seamless-care experience by gathering data, interpreting data, presenting information, and managing tasks. Currently, industry lacks specific and uniform interoperability standards to support seamless care between organizations that employ different EHR systems. The Requirements Traceability Matrix Section D, Attachment 003, sets forth specific Informatics and Interoperability contract requirements. To accomplish this, the Contractor shall provide software and services to enable seamless care between VA encounters, encounters with other Government healthcare institutions, and outside entities through advancements in all areas of the EHR that occur. In addition, the software and services shall support the VA designated standards, such as SMART on FHIR and SMART-enabled applications, or other published standards. **Note:** Specifics on creation of an interoperability sandbox/testbed will be incorporated in the Technical Dependencies Task Order which is currently being drafted.	***No change to RFP required.*** ***Will be included in Technical Dependencies Task Order***

5.10.4 Seamless Interoperability / Joint Industry Outreach
The Contractor is required to collaborate with VA affiliates, community partners, EHR providers, healthcare providers, and vendors to advance seamless care throughout the health care provider market. Seamless care will require the creation of an integrated inpatient and outpatient solution with software components that have been designed, integrated, maintained, and deployed with a design architecture that allows for access to and sharing of common data and an enabling security framework that supports end-to-end healthcare related clinical and business operations. Seamless care is the experience patients and providers have moving from task to task and encounter to encounter within or between organizations such that high-quality decisions form easily and complete care plans execute smoothly. Information systems support the seamless-care experience by gathering data, interpreting data, presenting information, and managing tasks. Currently, industry lacks specific and uniform interoperability standards to support seamless care between organizations that employ different EHR systems. The Requirements Traceability Matrix Section D, Attachment 003, sets forth specific Informatics and Interoperability contract requirements. To accomplish this, the Contractor shall provide software and services to enable seamless care between VA encounters, encounters with other Government healthcare institutions, and outside entities through advancements in all areas of the EHR that occur. In addition, the software and services shall support the VA designated standards, such as SMART on FHIR and SMART-enabled applications, or other published standards.

The objective of these interoperability solutions is to advance the state of the art supporting seamless care for Veterans. Existing organizations promoting interoperability among EHR vendors, such as The Argonaut Project, have developed or are planning to develop technology standards or technical approaches that may support the EHRM seamless care strategy. To the extent that underlying third party technology is available or made available to meet the following timelines, the following interoperability software solutions and services shall be delivered under this section:

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m) The Contractor shall support Knowledge Interoperability by supporting the extension of clinical content assets such as terminologies, clinical decision support rules, and order sets, etc., to the extent such extensions are consistent with the model and best practices of the controlling national standard. This includes the ability to curate, extend, and share that knowledge with clinical partners. This fosters rapid adoption from industry best practices, e.g., clinical professional societies.

5.10.4.1 Data Design and Information Sharing

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5.10.4.2 VA Digital Health Platform/Digital Veterans Platform Integration

VA anticipates developing a Digital Health Platform/Digital Veterans Platform (DVP) to consolidate critical VA EHR and non-EHR operational systems. The Contractor shall integrate the EHRM to interoperate with DVP, or future state VA platform, including the DVP API gateway or any other method designated by VA.