COMMONWEALTH of VIRGINIA

DEPARTMENT OF MEDICAL ASSISTANCE SERVICES

600 East Broad Street, Suite 1300

Richmond, VA 23219

June 15, 2016

Dear Prospective Offeror:

The Department of Medical Assistance Services (DMAS) is soliciting proposals from qualified firms to replace the Virginia Medicaid Management Information System (VAMMIS) with a Medicaid Enterprise System (MES). This Procurement seeks to establish one of several partnerships with contractors who can provide solutions to achieve the ongoing and dynamic goals of the Department. Specific details about this procurement are in the enclosed Request for Proposal (RFP) 2016-05.

Offerors must check eVA VBO at http://www.eva.virginia.gov for all official addendums or notices regarding this RFP. DMAS also intends to post such notices on the DMAS website at http://www.dmas.virginia.gov/Content_pgs/rfp.aspx; however, eVA is the official and controlling posting site. The Commonwealth will not pay any costs that Offerors incur in preparing a proposal. As provided in the Virginia Public Procurement Act, the Department may reject any and all proposals received or cancel this RFP.

All issues and questions related to this RFP shall be submitted in writing to the attention of Chris Banaszak, DMAS Contract Manager, Division of Budget and Contract Management, Department of Medical Assistance Services, 600 East Broad Street, Suite 1300, Richmond, VA 23219. Offerors are requested not to call this office. In order to expedite the process of submitting inquiries, it is requested that contractors submit any questions or issues by email in MS Word format to RFP2016-05@dmas.virginia.gov.

Sincerely,

Christopher Banaszak
DMAS Contract Manager

REQUEST FOR PROPOSALS
RFP 2016-05

Issue Date:	June 15, 2016
Title:	Enterprise Data Warehouse Solution RFP
Period of Contract:	Contract includes a Design, Development and Implementation (DDI) period and an initial base period of five (5) years for operations and maintenance, with provisions for three (3) one (1) year extensions.
Commodity Code:	92029 and 95823
Single Point of Contact:	Chris Banaszak, DMAS Contract Manager
Phone No:	(804) 225-4101
E-Mail Address:	RFP2016-05@dmas.virginia.gov

Pre-proposal Conference:	**1:00 P.M. ET, June 28, 2016**
Deadline for submitting inquiries:	**10:00 A.M. ET, July 8, 2016**
Proposal Due Date:	**10:00 A.M. ET, July 29, 2016**

Note: This public body does not discriminate against faith-based organizations in accordance with the *Code of Virginia*, §2.2-4343.1 or against a Contractor because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by State law relating to discrimination in employment.

DMAS is committed to increasing procurement opportunities for small and micro businesses, including small or micro businesses that are owned by minorities, women, or disabled veterans, strengthening the Commonwealth's overall economic growth through the development of its IT contractors.

PRE-PROPOSAL CONFERENCE/TELECONFERENCE: An optional pre-proposal conference/teleconference will be held on June 28, 2016, 1:00 P.M. ET at the Department of Medical Assistance Services, 600 E. Broad Street, Conference Room 7B, Richmond, VA 23219. The purpose of this conference is to allow DMAS an opportunity to clarify various facets of this solicitation. DMAS will not respond to questions during the pre-proposal conference.

To participate in the pre-proposal conference/teleconference, Offerors need to register with the SPOC: Chris Banaszak by sending an e-mail to RFP2016-05@dmas.virginia.gov stating the name of Offeror and Offeror's participating representatives. Due to space limitations, Offerors who will be attending the conference in person are limited to three (3) representatives. Offerors for electronic attendance will receive a teleconference number for the call. It is strongly recommended that Offerors register no later than 1:00 pm local time on the day prior to the teleconference to ensure that Offeror receives a teleconference number.

Bring a copy of the solicitation with you. Any changes resulting from this conference will be issued in a written addendum to the solicitation. **NOTE:** Contractor acknowledges by submitting a proposal in response to this solicitation that it is ineligible to submit a proposal in response to the Integrated Services Solutions procurement released by the Department of Medical Assistance Services.

Commonwealth of Virginia
Department of Medical Assistance Services
600 East Broad Street,
Richmond, VA 23219

Phone: (804) 786-7933
Fax: (804) 371-4981
http://www.dmas.virginia.gov

Request for Proposals (RFP)

Virginia Medicaid Enterprise System:

Enterprise Data Warehouse Solution

RFP No. 2016-05

Procurement Schedule	
Issue Date	June 15, 2016
Pre-proposal Conference	June 28, 2016 at 1:00 P.M. ET
Questions Due	July 8, 2016 by 10:00 A.M. ET
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Single Point of Contact (SPOC): Chris Banaszak, DMAS Contract Manager

Phone No.: (804) 225-4101

E-Mail Address: RFP2016-05@dmas.virginia.gov

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1.a. STATE VISION

The Commonwealth of Virginia, Department of Medical Assistance Services (DMAS) (also referred to throughout this RFP as "the Department") is replacing its Virginia Medicaid Management Information System (VAMMIS) with a Medicaid Enterprise System (MES). This Procurement seeks to establish one of several partnerships with contractors who can provide solutions to achieve the ongoing and dynamic goals of DMAS. The role of this RFP in the MES procurement strategy is described in the next section.

The Department desires to establish mutually beneficial partnerships with healthcare business-driven technology leaders for collaborating with the Department and other partners in this transitional journey to a more modern Medicaid Business and Technical environment. The Department is looking for collaborative, innovative, cooperative, flexible, and customer-oriented service organizations that are willing to work with the Department and each other to achieve common goals.

The Department's healthcare-related business opportunities and challenges include:

- Providing services to populations that are shifting from a smaller percentage fee-for-service (FFS) model to a higher percentage of Managed Care
- Providing a customer-centric services environment
- Creating the ability to measure performance of programs in order to adjust for better results
- Creating environments that can be monitored for fraud and abuse incidents
- Promoting an environment that fosters the Department's focus on servicing customers rather than overcoming technological development hurdles
- Creating a more nimble speed-to-market environment that is responsive to changes and innovation
- Creating an environment that promotes Department and Contractor relationships to achieve strategic plans
- Creating an environment that leverages State and Federal opportunities to improve healthcare on a national and statewide basis
- Creating a new environment that fosters a transition from a customization environment to one in which business needs are met through configuration of commercial off-the-shelf (COTS) and software as a service (SaaS) solutions

The Department has worked closely with the Centers for Medicare and Medicaid Services (CMS) representatives and other states to create a roadmap for transitioning from a monolithic system to a more modular, interoperable solution. To that end, the Department has established the following strategy to achieve a MES.

1.a.1. VIRGINIA MES PROCUREMENT STRATEGY

DMAS will issue the following five requests for proposals (RFP) to procure modular solutions that make up the Virginia MES:

- Core Services Solution (CSS)
- Enterprise Data Warehouse Solution (EDWS)
- Financial Management Solution (FMS)
- Integration Services Solution (ISS)
- Pharmacy Benefit Management Solution (PBMS)

This strategy entails an ISS Contractor to take the lead in formulating a Master Integration Plan to move DMAS to a more modular and interoperable environment. The transition will involve "staggered" implementations versus the traditional "big bang" implementation. The transition includes a DMAS hosted Encounter Processing Solution (EPS). DMAS staff, the ISS Contractor, and the Enterprise Data Warehouse Solution, Pharmacy Benefit Management Solution, Core Services Solution, and Financial Management Solution contractors will formulate a staged transition plan with a master schedule that ultimately results in a viable Virginia MES production environment.

The DMAS vision is to have the MES production environment to be built in phases. The Design, Development and Implementation (DDI) phases are listed below. The following table outlines the proposed model to accommodate this vision:

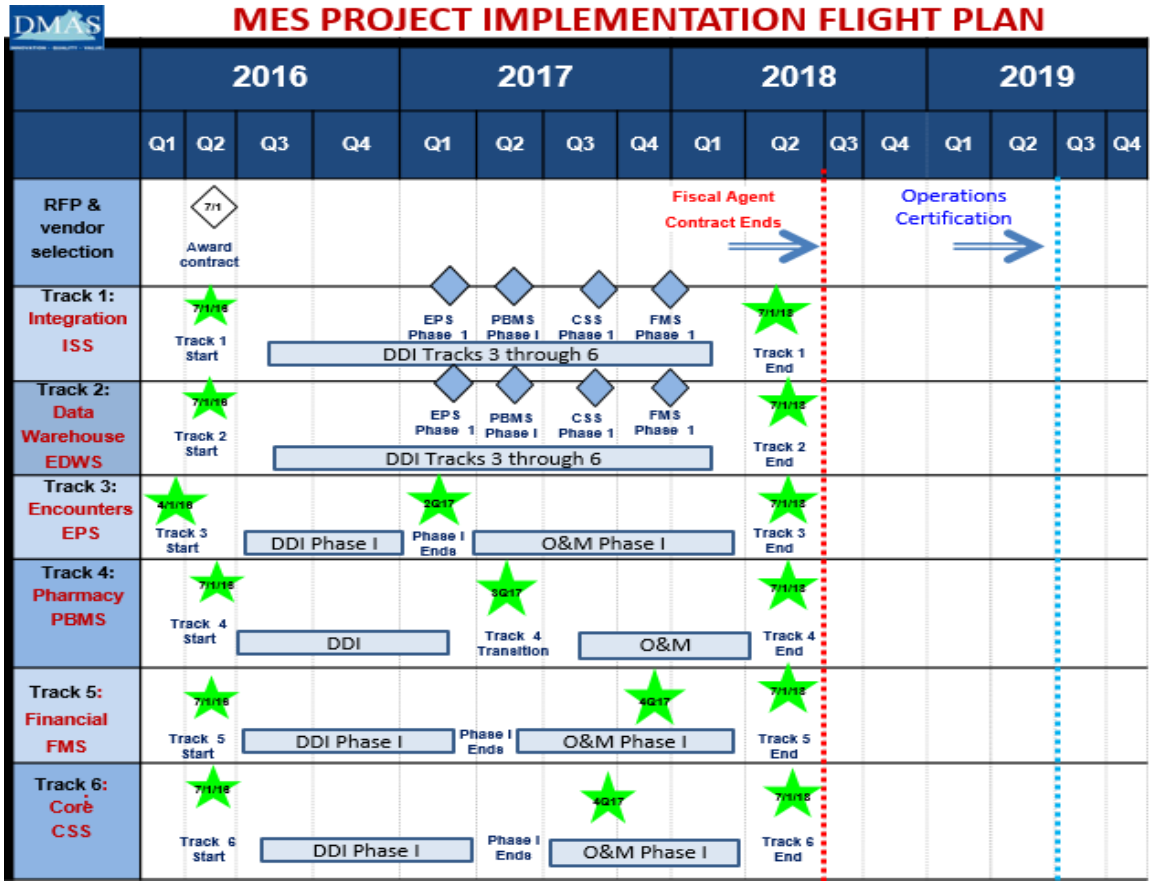
Table 1: MES Production Environment Phases

MES RFP	Business Process Areas
Core Services Solution	➢ DDI Phase I: Eligibility & Enrollment (Provider) and Provider Management with all related Portal access ➢ DDI Phase II: Business Relationship Management, Care Management, Eligibility and Enrollment (Member), Financial Management, Member Management, Operations Management, Performance Management, and Plan Management
Financial Management Solution	➢ DDI Phase I: Financial Accounting & Reporting ➢ DDI Phase II: General Ledger, Accounts Receivable Management, Accounts Payable Management, Fiscal Management, and Payment and Reporting
Pharmacy Benefit Management System	➢ DDI Phase: General/Claims Processing, Drug Utilization Review (DUR), Utilization Management, Service Authorization, Third Partly Liability (TPL), Encounters, Drug Rebate, Optional Services
Encounter Processing Solution (in-house)	➢ DDI Phase I: New Encounters Carve out ➢ DDI Phase II: All other Encounters

The Statement of Work specific to this RFP is given in Section 3 of the RFP. Appendix J provides the detailed requirements.

It is important that the System Integrator promotes an unbiased innovation spirit to the project and that MES contractors embrace this innovative spirit. DMAS will provide an initial high-level 24-month model "flight plan" that will integrate the ISS Contractor's and other MES contractors' input through the RFP response process. Each of the contractors whose proposals are selected and awarded to complete the scope of work in each of the MES RFPs will be managed separately under the Virginia Department of Medical Assistance Services' MES program.

Figure 1: Integration Project Implementation Flight Plan Model



Using multiple contractors, each assigned to one of the modular solutions, this modular MES strategy is in alignment with the CMS goal of moving away from a large, tightly-coupled MMIS environment to a more loosely-coupled service-oriented architecture (SOA) environment.

The Department seeks the following outcomes:

- A customer service-centric environment that gives members, providers, and citizens easy access to healthcare services and information using multiple devices and channels
- A COTS or SaaS solution that includes a product with robust functionality and configurability; the solution inherently would have periodic baseline software releases that reflect investments in the Medicaid and healthcare industry's ongoing functional needs and improvements

- Solutions that offer software versions that are continuously enhanced by periodic releases and offer the Department alternatives for configuring the baseline software
- Solutions that can be leveraged by other Medicaid agencies and are eligible to be funded by State and Federal dollars
- An environment that embraces innovation and change, allowing for better services while maintaining good stewardship of State and Federal resources
- Partnerships that co-manage risks through collaboration between healthcare and technology contractor experts and State Medicaid experts

The Department is certain that this undertaking will require the skills and talents of multiple stakeholders to achieve a successful MES outcome. We look forward to the opportunity to partner with the contractor community to better serve the State's most vulnerable citizens.

The following sub-sections provide examples of some of the innovative policy changes being considered by the Department and which the MES environment will likely need to support.

1.a.1.1. MANAGED LONG TERM SERVICES AND SUPPORTS (MLTSS)

MLTSS is a managed care program designed to serve individuals with complex care needs across the full continuum of care and through a coordinated delivery model that focuses on improving access, quality, and efficiency. MLTSS will operate with a fully-integrated delivery model that includes primary, acute, nursing facility, behavioral health, and community-based waiver services and supports, with very few carved-out services. Carved-out services for MLTSS-enrolled individuals will continue to be managed through the FFS program. This program will require the ability for real-time or near real-time data sharing between DMAS and MLTSS managed care organizations (MCO) to ensure continuity of care, especially for individuals who transition from FFS to MLTSS and for individuals transitioning between MLTSS MCOs. As the program will include dual eligibles, MLTSS must have the ability to interface with a variety of data sources, including Medicare data for dual eligibles. In addition, MLTSS must provide enrollment flexibility to include or exclude populations, or to carve in or carve out services, or to manually delay enrollment on a case by case basis. MLTSS is scheduled for implementation in 2017.

1.a.1.2. DELIVERY SYSTEM REFORM INCENTIVE PAYMENT (DSRIP)

DSRIP is an opportunity to innovate and invest in the Medicaid provider infrastructure in order to improve processes and technology, eventually realize efficiencies, and enable alternate payment models, such as value-based purchasing. The transformation envisioned includes changes to care management, data sharing, and patient engagement at the point of care. As a result, there will be improved beneficiary health, improved beneficiary experience, and a decreased rate of Medicaid spending.

1.a.1.3. VALUE-BASED PURCHASING COLLABORATIVE

Value-Based Care and Value-Based Alternative Payment (VBAP) are "demand-side healthcare management and cost containment strategies." VBAP places healthcare providers at some level of financial risk for both cost (resource utilization) and desired healthcare outcomes. The principles of VBAP methods are:

- **Shared Financial Risk** – Healthcare providers have an incentive to manage cost and use healthcare resources more efficiently
- **Provider Accountability** – Healthcare providers are responsible for achieving specific patient and population health outcomes, which drive the delivery system to develop integrated models of care and ensure effective care coordination
- **Effective Use of Electronic Health Record (EHR) Systems** – Delivery system will continue to build on targeted investments in Health Information Technology (HIT)
- **Continuous Performance Improvement** – Competition will drive healthcare providers to continuously seek strategic advantage by maximizing positive health outcomes and cost containment

1.b. INNOVATION TO GOVERNMENT

DMAS will look to incorporate innovation into government practices in this procurement. As technological advances are realized in the healthcare industry, State government should strive to embrace advances and seek opportunities that provide Medicaid members with information and practices that promote better healthcare choices while maintaining member privacy rights.

State government and Federal government advances must be recognized in tandem to fully utilize and leverage opportunities. Cross-pollination and collaboration through industry workgroups and standards organizations will ensure the proper State Medicaid environments can accommodate national and intrastate exchanges through standards and interoperability.

The Office of the National Coordinator for Health IT (ONC) is taking the lead on "steadily and aggressively" advancing progress on standards and interoperability.

ONC is committed to advancing this vision expeditiously, systematically, and sustainably. ONC first laid out this vision in "Connecting Health and Care for the Nation" with documents posted on the www.healthit.gov site that include: *A 10-Year Vision to Achieve an Interoperable Health IT Infrastructure*, followed by a draft of the *A Shared Nationwide Interoperability Roadmap Version 1.0* document.

As noted in the *Federal Health IT Strategic Plan 2015-2020* document, Federal entities will collaborate with other Federal agencies, States, territorial, tribal, local, and private stakeholders to:

- **Focus on Value** – Policies will continue to target solutions that improve healthcare, efficiency, safety, affordability, effectiveness, and access
- **Be Person-Centered** – Policies support electronic use and accessibility of healthcare information by individuals, caregivers, providers, and researchers across products and services so that everyone benefits from an environment in which all respect and value personal healthcare goals and values
- **Respect Individual Preferences** – Person-centered care embraces the values of individuals
- **Build a Culture of Health Information Access and Use** – Federal actions will help build an environment in which secure universal information is accepted and expected, and everyone benefits from accessing and sharing information
- **Create an Environment of Continuous Learning and Improvement** – Policies target to improve communications between research and healthcare communities

- **Encourage Innovation and Competition** – Government actions support continuous innovation and competition in the healthcare information technology (IT) market space
- **Be a Constant Steward of the Country's Money and Trust** – Government seeks to use its resources judiciously—this means relying on the private sector to accomplish important societal objectives

State and Federal collaboration is critical in making the vision become a reality. In addition, as healthcare informatics become more readily available and accessible, the Department will look to include innovative activities such as:

- Developing a healthcare management / wellness network that educates members
- Creating an environment that has a single portal entry point to conduct Medicaid business that allows navigation to all Medicaid service providers
- Establishing a Medicaid portal that services both members and providers through service exchanges connected to the portal
- Enabling self-service capabilities that allow members and providers to consume information on their own schedules
- Creating a nimble environment in which new services and innovations are added transparently to business owners and become accessible without having to revamp the entire Medicaid portal

The flow of State government business environments identified in the Virginia Information Technology Advisory Committee (ITAC) Business Plan and included in the **COVA Strategic Plan for IT: 2012-2018,** http://www.vita.virginia.gov/library/default.aspx?id=6442471238 identifies the emerging technology areas that will play or will likely play a role in Technology Business Plan initiatives. They are:

- Social Media (SM)
- Mobility (M)
- Cybersecurity (CS)
- Enterprise Information Architecture (EIA)
- Enterprise Shared Services (ESS)
- Cloud Computing Services (CCS)
- Consolidation/Optimization (C/O)

The Strategic Plan states a Virginia goal for leveraging each trend and identifies several strategic directions and specific activities that agencies can use to harness each trend to fulfill the initiatives. The description subsection includes a brief explanation of the technology, key business drivers for considering the technology, how the technology supports achieving the five ITAC initiatives, and the challenges to incorporating the technology into the Virginia or DMAS technology portfolio. The ITAC Business Plan is located at: http://www.vita.virginia.gov/default.aspx?id=6442471239.

1.c. OBJECTIVE

The overall business objective of this RFP is to enter into a contract with a contractor who will provide a solution that transforms select systems and business processes for the DMAS programs. This objective

will be met by procuring technical and business services to replace the existing legacy VAMMIS with a more modular and technologically-advanced solution that adheres to CMS' Medicaid Information Technology Architecture (MITA) 3.0 Framework. In Section 3 of this RFP, Scope of Work, DMAS refers to General Requirements and to Enterprise Data Warehouse Solution requirements (the requirements are listed in Appendix J). The requirements are organized by MITA business area and comprise the requirements requested in this RFP. The selected Contractor will assist DMAS in achieving its overall strategic plans for the future while supplying a system that will be certified by CMS using its latest Medicaid Enterprise Certification Toolkit (MECT) checklists.

DMAS believes its objectives can best be defined and accomplished by approaching our systems and procedures in a manner that aligns with the MITA 3.0 Framework. Having recently completed a MITA State Self-Assessment (SS-A), DMAS has determined that it aspires for a MITA To-Be capability level of three (3) or higher in virtually all areas of the business, information, and technical architectures.

DMAS is seeking a solution that positions the Department to achieve the highest practical MITA capability levels within today's landscape, while also positioning the Department to further enhance our capabilities as future technological advances present themselves.

DMAS expects that qualified contractors will present solutions that already support the functionality required to operate a State Medicaid Agency consistent with the MITA 3.0 Framework and the CMS vision for a MES, as well as support other best practices and functionality that have been identified through years of experience. In addition to meeting the required functionality, DMAS is seeking a solution that is both flexible and adaptable, and able to easily interface through an integration layer with other contractor systems, business intelligence, and analytics tools. In addition, as part of this RFP, DMAS is seeking operations support services with the expectation of excellent customer service and operational automation for providers, members, and DMAS.

DMAS' expectation is that the MES will support the following objectives.

- **Enterprise Solution –** DMAS enthusiastically embraces the concept of a MES, and is looking for a solution that goes beyond the traditional MMIS subsystems to service the Agency. This RFP will address specific aspects – primarily, the Enterprise Data Warehouse Solution – of the MES, and together with the other solutions sought through separate procurements, the solutions will become an integral part of the overall MES.
  - ✓ The Contractor's approach to the business processes that comprise the scope of this RFP is expected to help transform the way DMAS conducts its business – such that DMAS is positioned to operate effectively and in accordance with Level 3 or higher MITA capability levels wherever possible. This also includes the information and technical architectures that support the solution, and an overall conformance to both the MITA 3.0 Framework and Seven Conditions and Standards.
- **Technical Design –** In accordance with the CMS Seven Conditions and Standards, the proposed solution shall be an existing system that is considered a COTS application or a SaaS solution. The Solution shall be modular, able to exist as a package that runs with its own databases, and able to execute within a SOA environment in order to send and receive services through an Enterprise Service Bus (ESB).
- **Customer Service –** The MES shall meet the needs of our providers, members, and citizens by providing services and information in a user-friendly and state-of-the-art environment. Portals

shall provide a "one-stop shop" and provide a means to access all needed functionality from a single point of entry.

- ✓ DMAS is also looking to leverage new technology to provide users with features such as mobile applications.

- **Increased Automation –** DMAS is seeking to utilize automation to replace or enhance current manual processes performed by the business wherever possible. We also look to expand automated processes with a focus on rules engines, workflow, and electronic communications.
  - ✓ The MITA 3.0 Framework identifies business processes that have not historically been addressed by MMIS systems. DMAS expects to utilize automated modules provided by the Contractor to add efficiency, accuracy, and consistency to improve information gathering and reporting for many business processes.
- **Flexibility –** Through configurable business rules, workflow, and other features, DMAS would like maximum flexibility to easily accommodate and integrate Agency initiatives while expanding its usage of regional, statewide, and national information exchanges. The Solution shall provide flexibility so that the need for customization is minimal in order to meet the initial requirements as well as future changes. Knowledgeable DMAS users shall be able to make and test configuration changes.
  - ✓ The components that comprise the proposed solution shall deploy innovative solutions that support rapid, efficient, and accurate implementation of on-going State, Federal, and industry mandates.
- **Information Exchanges –** A key criteria for the higher MITA capability levels is to engage in information exchanges to support a variety of business processes. The proposed solution shall promote the use of industry standards for information exchange. DMAS would like to expand its use of electronic transactions and participate in available information exchanges when our business processes and information can be enhanced. The proposed solution shall be able to utilize and provide standard electronic transactions in accordance with the Virginia MES Concept of Operations (COO) and Integration Plan.
- **Performance Measures –** In order to support continued improvement, the proposed solution shall provide information and reports that can be used to evaluate both Contractor and DMAS performance relative to the processes supported by this contract. This includes information related to productivity and accuracy that can be used to measure current performance as well as identify areas for improvement.
- **Project Management –** DMAS expects the selected contractors to employ and demonstrate a sound project management and governance methodology that meets State and DMAS standards and expectations. In addition, DMAS will emphasize the importance of coordination of efforts among its staff and all contractors, as no single contractor can perform its required responsibilities without coordination and cooperation with the other contractors. The selected contractors shall maintain communication with other contractors and DMAS management and staff as necessary to meet its responsibilities that pertain to this RFP's scope of work.
- **CMS Certification –** Once implemented, the components of the proposed solution shall meet the related requirements of the updated certification checklist and thus position the complete MES for CMS certification. In addition, the Contractor shall support all CMS requirements

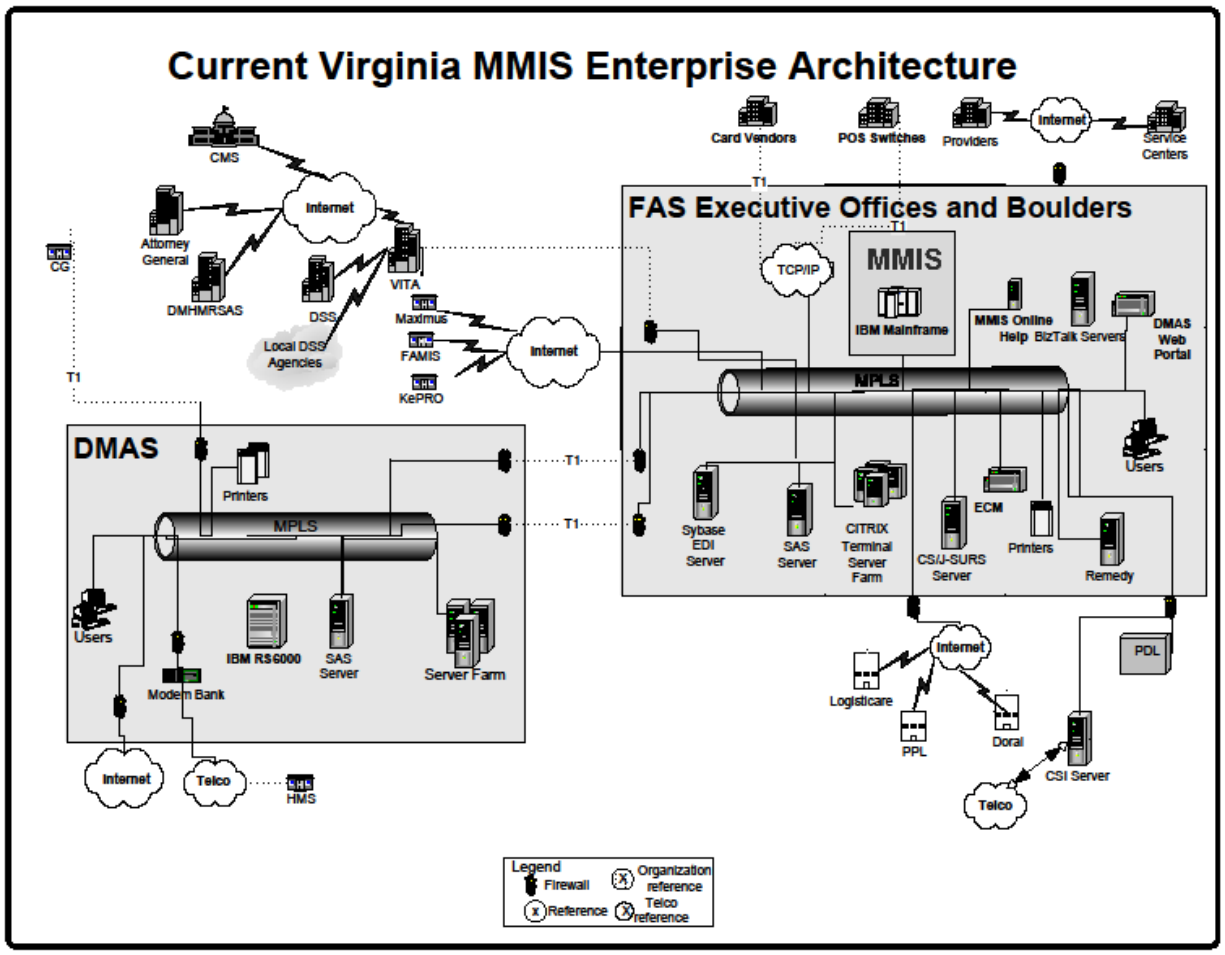
throughout the Design, Development, and Implementation (DDI) phases of the project, including providing deliverables needed for satisfying CMS' Independent Verification & Validation (IV&V) requirements.

In summary, through this RFP and the resulting contract, it is the objective of DMAS to acquire a system and establish a business partnership that includes services that will assist the Department in the transformation to a MES that leverages technology, experience, and innovation, and provides the foundation for a modern and effective solution to accomplish our mission.

1.d. PRESENT SITUATION

The Virginia Medicaid Management System (VAMMIS) is a 12 year old traditional monolithic mainframe based solution. It consists primarily of an eligibility subsystem, claims processing subsystem, provider subsystem, and a financial subsystem. In addition there are several other ancillary systems with which it interfaces for various other capabilities. These include but are not limited to: Management and Administrative Reporting System (MARS), Early and Periodic Screening, Diagnosis, and Treatment (EPSDT), Surveillance and Utilization Review System (SURS), and Maternal and Infant Care Coordination (MICC). These systems are managed and operated by a Fiscal Agent.

Figure 2: Current Virginia MMIS Enterprise Architecture



As technology has evolved since the implementation of this system, the system has become defined by the following constraints which include: a general lack of agility, increasing operational costs, and the growing consumption of technical resources that have become necessary to incorporate changes on this dated development platform.

DMAS does not have a data warehouse solution that can support enterprise data. Currently, data is managed by different divisions in silo and in different formats. The fiscal agent manages a database and maintains historical claims data and some external data. This approach does not give full control to DMAS to cleanse the data prior to load and does not provide transparency to users to detail data.

Recent developments in the Medicaid industry and a strategic alignment of Federal, Commonwealth, and Agency direction with MITA resulted in a replacement of the Commonwealth of Virginia Eligibility and Enrollment (E&E) system. The E&E system is intended to become the system of record for all members in the social service programs in the Commonwealth.

The goal for the Department is to align the next generation of their Medicaid Enterprise System with MITA 3.0 and obtain the benefits that the MITA Framework promises to deliver relative to the current constraints.

In consideration of the above issues and strategic perspectives, the Department is planning on evolving from this traditional MMIS concept to a more modern Medicaid Enterprise System (MES).This system would be characterized by the integration of modularized COTS solutions, which are highly decoupled, and connected through a service oriented software solution that will be rules based, and provide alignment with MITA 3.0 Framework. The migration to the new MES environment will provide the Department with a platform that will eliminate the current constraints and advance them into a leadership role within the state Medicaid arena.

The goal is to have a centralized data warehouse to manage all of DMAS relevant data and provide easy access to accurate data to required users within the agency and external stakeholders in a timely manner.

1.e. FUTURE STATE

1.e.1. INTRODUCTION

The Virginia MES is a modular approach to replace the VAMMIS and includes contracting with an ISS Contractor that will oversee the SOA/ESB environment. The MITA Framework and Business Process functionality will be addressed through multiple RFPs, including: Core Services Solution, Pharmacy Benefit Management Solution, Financial Management Solution, and Enterprise Data Warehouse Solution, as well as a State-run Encounter Processing Solution and ancillary applications that support the remaining MITA business processes. Project oversight for CMS will be conducted by an IV&V contractor procured by the Department.

The Virginia MES will be achieved through a staggered transitional approach. The Department has provided a conceptual model of the new MES environment in the diagram on the following page. A Master Integration Plan will include input from the Department Transition Model (Flight Plan), ISS Contractor, MES-awarded contractors, IV&V contractor, and DMAS. DMAS seeks a multi-contractor partnership for transitioning to a modular environment, while minimizing the risks and disruptions to services that are provided to State customers.

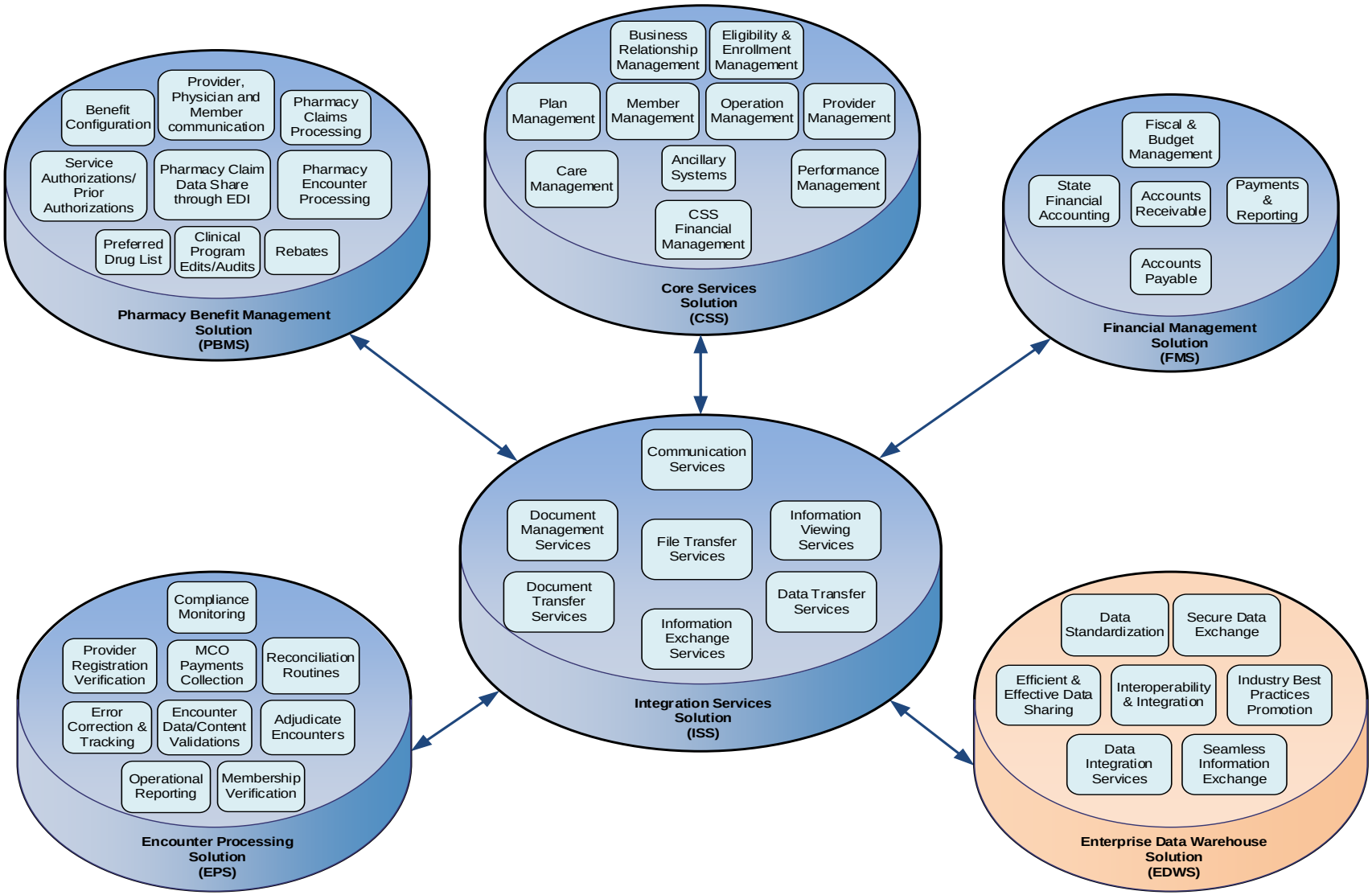
This RFP includes requirements to meet DMAS' business process objectives. The general and detailed requirements are included in Section 3, Scope of Work, and Appendix J, respectively.

1.e.2. BUSINESS DOMAIN OVERVIEW AND DIAGRAM

The EDWS provides the functionalities listed below, but not limited to:

- Data Standardization
- Interoperability and integration
- Secure Data Exchange
- Promote industry best practices
- Efficient and effective data sharing
- Support integration of clinical and administrative data
- Promote seamless information flow between systems without any barriers based on differentiating factors like source of program sponsorship, geography, etc.

Figure 3: DMAS MES EDWS Business Domain View of the Future State



1.e.3. TECHNICAL ARCHITECTURE OVERVIEW AND DIAGRAM

This technical overview narrative and diagram provides a high-level vision of and guidance on the future state and **is not a mandatory set of requirements.** The Contractor is encouraged to provide its best solution and is not restricted by the diagram on the following page.

Per CMS Enhanced funding guidelines outlined in Medicaid IT Supplement (MITS-11-01-v1.0), the Contractor shall comply with the CMS Seven Conditions and Standards.

The EDWS shall use Service Oriented Architecture to effectively communicate the data or information requested by other sources through the ISS.

The EDWS shall have a communication service bus, which shall serve as a single point of contact that interacts with the ISS. The system's communication bus shall use Web Services, Queues, FTP, SFTP for various types of information formats like XML, JSON, HIX, plain text, HTML etc. The EDWS shall have the ability to perform synchronous, asynchronous, or scheduled data or communication exchange with other systems by working through the ISS.

EDWS is solely responsible for processing the incoming batch feeds from other systems through ISS, by performing its own data mapping, parsing, and translation as per their business rules.

The EDWS shall provide an application services layer if applicable, consisting of a Portal dashboard to monitor system health, access audit logs, transaction details and troubleshoot. Additionally, the EDWS shall provide a User Interface (UI) for drill down views on each request and response passing through the system, which includes all its supported services.

The EDWS shall provide a Reporting UI, which allows, such as downloading or emailing report attachments, pertaining to any user entitled accessible information in the system. These reports shall provide multi-dimensional data views of the information related to the system.

The EDWS shall provide a database system—either a NoSQL or a traditional Relational Database Management System (RDBMS)—which contains information that is not persisted in the data marts. The data persisted can also contain details like transaction logs, file transfer job status, user activity logs etc., which can be queried to be displayed on the dashboard.

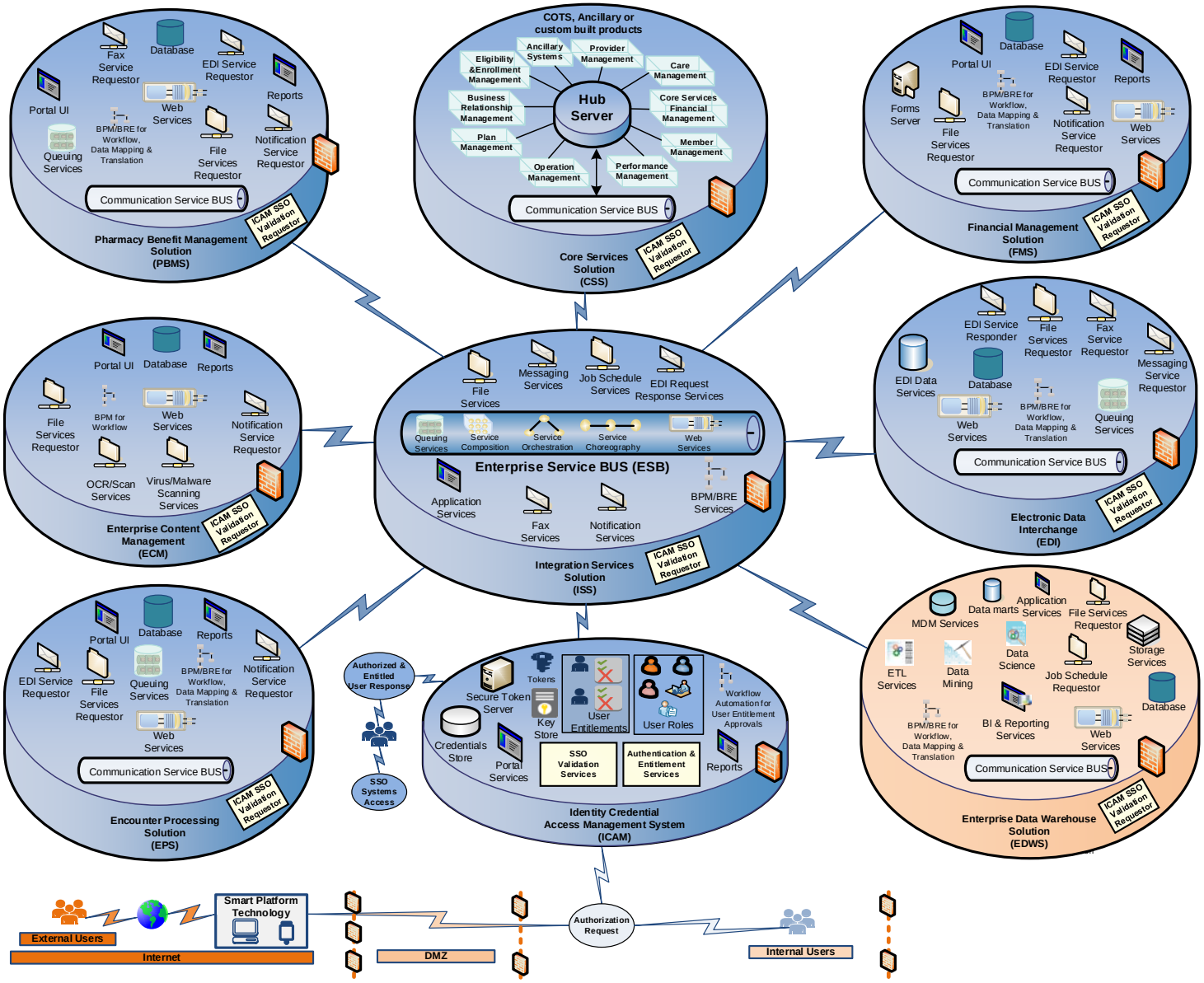
The EDWS in addition shall provide components like ETL Services, BI & Data Services, MDM Services, Data marts, Storage Services, Data Mining, Statistical Analytics, and Predictive Analytics to provide enhanced business functionalities.

The EDWS shall contain a combination of COTS products, custom built products, or third party supported products. In these kind of topology scenarios, when smaller subsystems comprise the whole system, which are self-contained by itself, the system then may use a Hub Server that shall serve as a main communication service to pass data or information within these subsystems.

The EDWS shall provide a component or a service that will allow seamless integration with MES Portal and Identity Credentials Access Manager (ICAM) system for authorization to allow single sign-on capability.

The EDWS shall provide a component or a service that shall validate the session token, entitlements, and authentication status of an incoming request by communicating with the ICAM system. This validation shall happen in cases where the request didn’t come into this system through the ISS, periodic random checks, and if the session token has surpassed the “token expiration” time period.

Figure 4: DMAS MES EDWS Technical and Information Architecture View of the Future State



1.e.4. EXPECTATION OF ROLES AND RESPONSIBILITIES

The following is an overview of roles and responsibilities, but is not intended to be all inclusive.

MES ISS CONTRACTOR ROLES AND RESPONSIBILITIES

MES ISS Contractor roles and responsibilities include the following:

- Establish a Master Integration Plan during the DDI phases and support staggered implementations
- Fill the role of an ISS in the Virginia Medicaid Enterprise System by providing secure data exchange between the application modules within an agreed upon Service-Level Agreement, using canonical data format, standards, and protocols
- Develop real-time and batch services to exchange HIPAA transactions, HL7, Provider, Member, Claims, Encounter, Financial, Pharmacy, and Reference data between the MES modular source systems and the consuming Contractors, data exchanges, and EDWS
- Facilitate the exchange of data through files, message queues, and Web services
- Convert the format of the data exchanged based on the needs of the producer/consumer of the data by using industry standards
- Maintain the service contracts of all the real-time and batch services hosted in the integration platform
- Provide project leadership as a single point of contact who shall own all issues related to integration of ISS with other systems/solutions. Coordinate with other contractors or sub-contractors to ensure these issues are taken all the way until closure or resolution within acceptable project timelines.
- Procure, own and implement a COTS product for Identity, Credentials and Access Management (ICAM) solution as per the requirements highlighted in Appendix J.9 and J.10.

MES ISS Contractor roles and responsibilities **exclude** the following:

- ISS Contractor will NOT own the application data
- ISS Contractor will NOT permanently store the application data
- ISS Contractor will NOT apply edits (rules) on the application data

MES CONTRACTOR (CSS, FMS, PBMS) FOR COTS OR SAAS ROLES AND RESPONSIBILITIES

MES Contractor for COTS or SaaS roles and responsibilities include the following:

- Provide a solution that is “uncoupled” from other solutions
- Have the necessary databases to run the COTS package or SaaS
- Provide outbound data as required for the EDWS and other COTS contractors through the ISS
- Provide product base standard and customized reports that are sent to the Enterprise Content Management solution

- Maintain code lists and reference files needed only by the contractor's application; provide DMAS with recommendations regarding the most cost effective licensing options

Department Roles and Responsibilities

Department roles and responsibilities include the following:

- Authorize approvals, related deliverables, and implementation for MES Contractors and enterprise change management requests
- Oversee contractual relationships to ensure the environment and solutions adhere to the MITA 3.0 Framework and Seven Conditions and Standards
- The EDWS will be run by the DMAS Office of Data Analytics (ODA) which will manage service requests for internal and external reporting, data sharing, visualization, and advancing research and analysis

EDWS Contractor Roles and Responsibilities

EDWS Contractor roles and responsibilities include the following:

- The EDWS integrates disparate data sources (both internal and external) and will be a central repository for all of DMAS' relevant information
- The EDWS will provide easy access to timely and accurate data consistently
- The EDWS will manage "data at rest" and will receive data from COTS application through the ISS Contractor
- The EDWS will enable data access to users at different levels, including Executive Management Team, Business Managers, External Stakeholders, Statistical Analysis System (SAS) Analysts, and other users

EDWS Contractor roles and responsibilities **exclude** the following:

- The EDWS will NOT load application transactional data and will not support real-time reporting
- Letter generation process will NOT be managed by the EDWS
- EDWS will NOT modify the source data; it will only apply transformation rules identified by the Data Governance committee

2. TECHNOLOGY STANDARDS

2.a. CMS REQUIREMENTS SEVEN CONDITIONS AND STANDARDS

The Contractor will be required to provide a solution that complies with and supports the CMS Seven Conditions and Standards, including alignment with the MITA 3.0 Framework, as well as future MITA advances.

Under sections 1903(a)(3)(A)(i) and 1903(a)(3)(B) of the Social Security Act, the CMS has issued what is identified as the Seven Conditions and Standards that must be met by the states in order for Medicaid technology investments (including traditional claims processing systems, as well as eligibility systems) to be eligible for the enhanced match funding. The Seven Conditions and Standards include the following: Modularity Standard, MITA Condition, Industry Standards Condition, Leverage Condition, Business Results Condition, Reporting Condition, and Interoperability Condition.

These requirements can be found in Appendix J.8 – Seven Conditions and Standards.

2.b. STATE TECHNOLOGY STANDARDS

Virginia's Enterprise Architecture is a strategic asset used to manage and align Virginia's business processes and Information Technology (IT) infrastructure/solutions within Virginia's overall strategy. The Enterprise Architecture is also a comprehensive framework and information repository which makes available the information necessary to perform the State's mission, and the technologies necessary to support that mission in response to the changing business policies and needs.

The following link provides access to the document, **"ITRM Standards EA225-10"**, which defines the Commonwealth of Virginia (COV) Enterprise Architecture Standard, as governed by VITA.

http://www.vita.virginia.gov/uploadedFiles/VITA_Main_Public/Library/PSGs/EA_Standard.pdf

The Contractor will address and adhere to the requirements relating to Virginia's Technology Standards, and any subsequent updates.

These requirements can be found in Appendix J.1 – Technology Standards.

3. Scope of Work

3.a. Contractor General Requirements

3.a.1. Project Design, Development, and Implementation (DDI)

Introduction to Project DDI and Operations / Maintenance

Contractors are required to provide a clearly defined project management methodology that follows the Project Management Institute's (PMI) Project Management Body of Knowledge (PMBOK® Guide) and other project management industry best-practices, as appropriate. Whether a traditional waterfall software development life cycle (SDLC) or agile methodology is used, the requirements to support the MES Program Management objectives are the same. The Contractor will have sole responsibility and accountability for the functionality and services provided by this contract.

The Contractor will define a Documentation Management Plan that will identify all of the documentation and deliverables that will be produced to support its DDI methodology as well as on-going Operations and Maintenance. The documentation that is defined must provide what is needed by the Contractor to successfully implement and operate the proposed solution. The documentation must also provide DMAS with the information it requires to understand and approve the details of the solution as well as provide the information it needs to fulfill its business requirements with respect to the Enterprise Data Warehouse Solution.

The selected Contractor is expected to work in collaboration and partnership with the DMAS PMO, the MES ISS Contractor, the Department conversion team, and other MES Solution providers. The integrated MES work plan will include tasks and dependencies from each of these project stakeholders.

Major Milestones and Deliverables

Appendix I – Milestones and Deliverables contains the major milestones and deliverables model.

In addition, the selected Contractor will be required to adhere to a project management status reporting schedule and report on certain project management criteria that can be used to monitor and assess the health of the project.

Operations and Maintenance

Once implemented, the Enterprise Data Warehouse Solution will move into the Operations and Maintenance phase, and the Contractor will provide a detailed project plan for any new projects or releases.

The Department desires to move to an environment where the Contractor values customer input into product release updates through a defined user group that identifies business practices and functional enhancements to meet DMAS business needs. The Major Milestones and Deliverables requirements can be found in Appendix J.2 – Major Milestones and Deliverables.

3.a.2. TESTING OVERVIEW

Testing is an integral part of a complete SDLC or agile methodology, which means that in-depth, process-driven, fully documented testing processes are required for all implementations and configuration changes in the MES throughout the life of the contract.

3.a.2.1. REQUIRED TESTING METHODS

Owing to the reach and importance of testing, the Contractor shall describe in detail the testing methodology that will become the foundation for its test plans. The methodology shall include a description of the testing that will be performed at all stages of the SDLC, including but not limited to the following:

UNIT TESTING

Unit testing is at the lowest testing level and tests the basics of a unit of software. Prior to the initiation of System Integrated Testing, it is what was used to find defects.

INTEGRATION TESTING

Integration Testing is performed when two or more units have been tested and are combined into a larger, single structure. It refers to the testing being done on the interfaces between the components and the larger structure being constructed. Prior to the initiation of System Integration Testing (SIT), adequate integration testing is what is used to find defects.

SYSTEM INTEGRATION TESTING

System Integration Testing occurs when the system has been handed over from the developers to the Contractor's Testing Unit. SIT tends to affirm the end-to-end quality of the entire system by including quality attributes such as reliability, security, and maintainability.

SIT verifies that related groups of functionality are correct and that the MES is free from defects and functions as required by approved requirements and system design documents.

Upon completion of SIT, the Contractor shall ensure the MES functions as required by the approved design prior to DMAS' initiation of User Acceptance Testing.

NOTE: System Integration Testing for initial implementation shall include the use of converted data.

USER ACCEPTANCE TESTING (UAT)

User Acceptance Testing (UAT) occurs before implementation into the production environment and after a completed project has been released by the Contractor's Testing Unit to the intended users. UAT's primary purpose is to allow users to test the system in a pseudo production environment to verify that it is performing to all established specifications, and that its infrastructure works within the defined constraints.

NOTE: The UAT process is required throughout the life of the contract for enhancements and modifications.

INTERFACE TESTING

Interface Testing is performed by the Contractor to ensure providers, EDI service centers, business partners, and other agencies can submit transactions over appropriate channels, and can send and receive both proper acknowledgements and negative responses, including the testing of timeframes between the receipt of a transaction and the notification/response to the submitter for all modes of transmission.

STRESS/PERFORMANCE TESTING

Stress/Performance Testing is performed by the Contractor to demonstrate that the software and hardware will provide the intended functionality and meet SLA requirements under production conditions, and to ensure technical, application, data, and network architectures meet the anticipated transaction volume or workload.

REGRESSION TESTING

Regression Testing is performed by the Contractor and allows a consistent, repeatable validation of each new release of the MES component(s) or COTS version. Such testing ensures reported defects have been corrected for each new release and that no new quality problems were introduced in the maintenance process.

OPERATIONAL READINESS TEST

The Operational Readiness Test (ORT) is performed by DMAS and shall be fully supported by the Contractor to ensure that the application and infrastructure have been installed and configured for successful operation within the production environment. It will verify that all users are prepared to operate the system at initial implementation.

3.a.2.2. TEST CASES, SCRIPTS, AND MANAGEMENT TOOLS

The Contractor shall develop test cases and scripts that thoroughly test the functionality of the system for all test phases. Additionally, the Contractor shall utilize a management tool that integrates seamlessly among all areas of the MES, has the ability to consolidate and structure the test process, and is capable of automated test and manual test processes to easily manage multiple environments.

- **Cases** – The Contractor will develop comprehensive positive and negative test cases for all phases of testing. The Contractor shall develop robust (negative) test cases that address stressing the system with bad or invalid data to ensure that the system properly rejects negative data.
- **Scripts** – The scripts shall provide step-by-step instructions for executing the tests and the expected results. Test scripts may take the form of either documented textual instructions that are executed manually or computer readable instructions that enable automated test execution.

The scripts shall address all data scenarios that the system will process in accordance with business processes.

- **Management Tool** – The Contractor will use this tool as a single application for managing test cases, environments, automated tests, manual test processes, defects, and project tasks. The test management tool shall allow the Contractor the ability to streamline the testing process, tie

test cases directly back to requirements, and allow quick access to data analysis, collaborative tools, and tracking of bugs and defects.

3.a.2.3. INTEGRATED TEST FACILITY

The Contractor shall provide an Integrated Test Facility (ITF) that will be used by DMAS staff and Contractor staff to test system processing and ensure that quality control is maintained. In addition to environments for all test phases, the ITF shall include a 'mock production' test environment with online and batch programs and system files that are identical to the production environment.

NOTE: The ITF will allow the Department to monitor the accuracy of the MES and test the production system by processing test data and other transactions without affecting normal operations.

The Contractor shall have processes in place to routinely load production and other data into the ITF, at DMAS' request, to perform its automated processes (e.g., reference values such as system parameters, system lists, reference tables, edits, dispositions, and security tables).

NOTE: The Contractor shall protect privacy by the use of an industry standard data anonymization package while providing accurate test data.

- **Test Results** – The Contractor shall provide comprehensive documentation for all requested test results for DMAS approval prior to any software or COTS product being implemented in the production environment. The documentation shall delineate the results of each testing phase by identifying any problems and explaining their resolution.

3.a.2.4. DMAS AND CONTRACTOR TESTING INTERACTION

The Contractor shall support the testing initiatives of DMAS and Contractor staff in the testing environment.

- **Test Management Plan Review and Approval** – All test plans shall be reviewed and approved in accordance with DMAS' standard deliverable submission and review procedure detailed in RFP Section 5.a.1.
- **Scheduling and Coordinating Test Activities** – The Contractor will be responsible for scheduling and coordinating all testing activities to ensure that each test is prepared and performed in accordance with the Test Management Plan. The Contractor will train DMAS personnel as appropriate to participate in the testing effort.
- **Providing Testing Tools, Materials, and Resources** – Unless otherwise specified, the Contractor will be required to provide all tools, testing materials, and resources necessary to effectively perform the required tests.

3.a.2.5. TEST MANAGEMENT PLAN

In addition to the Contractor's overall testing methodology, the Contractor shall develop a Test Management Plan and approach to the initial MES implementation. The specific Test Management Plan requirements can be found in Appendix J.3 – Testing.

3.a.3. CHANGE MANAGEMENT

Contractors are required to provide a clearly defined and comprehensive change management methodology that follows the PMBOK® Guide and project management industry best practices. This methodology shall be documented in a Change Management Plan that is approved by DMAS.

There shall be a Change Management Plan for the DDI phase of the project, as well as for the on-going Operations and Maintenance phase. The respective plans shall be submitted and approved in accordance with the schedule defined in Appendix I – Milestones and Deliverables.

The purpose of a Change Management Plan for the DDI phase is to protect the achievability of the required project scope and the integrity of the project schedule and budget. The Change Management Plan will define a formal process to address any requested changes to requirements or scope defined in this RFP. The proposed change management approach shall address the initiation, submission, impact assessment, review, and approval or rejection of all changes within realistic and agreed upon time periods that are reflective of the solution for the proposed change. Changes to requirements or approved DDI deliverables, including components of the Project Management Plan, shall only be made based on an approved change request.

In addition to the Change Management Plan the Contractor provides that is native for the MES module configuration and updates, the Contractor will participate in an Enterprise Integration Change Management Process. This Change Management provision is coordinated by the Department PMO and the MES ISS Contractor and involves changes that impact other MES contractors that are deemed to have a dependency on a change, or if a change impacts the MES module of the Contractor. For example, if an exchange exists where an MES Contractor is providing new data that is exchanged with one of more contractors, an Enterprise Integration Change Management process is invoked that ensures the changes are accurate and tested end-to-end.

The purpose of the Change Management Plan for the Operations and Maintenance phase is to document and control changes made to any component of the approved production environment, including but not limited to software, hardware, data, and documentation. The proposed change management approach shall address submission, review, and approval or rejection of all changes within realistic and agreed upon time periods that are reflective of the solution for the proposed change. Any requested change shall be processed using a methodology that is appropriate for the type and scope of change being requested, and shall include the acquisition of necessary approvals throughout the process.

The Change Management Plans shall provide the steps that will be taken to assure that the project has adequate control over changes to the items necessary for creating or supporting all DDI deliverables and production components. The Change Management Plans shall include both written and diagrammatic representation of the processes and procedures undertaken to initiate, evaluate, review, manage, and implement any needed changes, including the approach for resolving any conflicts regarding change requests that occur both before and after the proposed solution is implemented. An Enterprise Integration Change Management provision will need to account for integrated changes that occur in the Operations and Maintenance phase. Change Management requirements can be found in Appendix J.4 – Change Management.

3.a.4. IV&V/CMS Reviews and Certification

CMS requires that States procure a contract to conduct Independent Verification and Validation (IV&V) services for the MES Planning and DDI activities. An IV&V Contractor brings technical, managerial, and financial independent evaluation expertise to assess the MES project. MES contractors will be subject to IV&V reviews along with the Department. The following section outlines the IV&V scope of work and areas the Contractor's project management practices may need to be adjusted based on the IV&V reports to the Department and CMS.

A focus by the IV&V Contractor on "verification" and "validation" of project processes and system modules is conducted to ensure the solution satisfies defined requirements.

The Department will procure an IV&V Contractor that will act in accordance with Federal regulation 45 CFR 95.626 and provide the following to meet compliance:

- (a) IV&V assessment and analysis of the State's system development effort may be required in the case of Advanced Planning Document (APD) projects.
- (b) IV&V efforts shall be conducted by an entity that is independent from the State (unless the State receives an exception from CMS), and the IV&V Contractor selected shall:
  - ✓ Develop a project work plan. The plan shall be provided directly to the CMS at the same time it is given to the State.
  - ✓ Review and make recommendations on the management of the project, both State and Contractor, and the technical aspects of the project. The IV&V contractor shall give the results of its analysis directly to CMS at the same time it reports to the State.
  - ✓ Consult with all stakeholders and assess the user involvement and buy-in regarding system functionality and the system's ability to support program business needs.
  - ✓ Conduct an analysis of past project performance sufficient to identify and make recommendations for improvement.
  - ✓ Provide risk management assessment and capacity planning services.
  - ✓ Develop performance metrics which allow tracking project completion against milestones set by the Department.

The IV&V Contractor will review three (3) main areas, along with subtopics to include but not limited to:

Project Management

- Progress against budget and schedule
- Risk management
- Feasibility and quality of the Implementation Advance Planning Document
- Inclusion of State goals / objectives and all Federal MMIS requirements in requests for proposals and contracts
- Adherence to the SDLC
- Incorporation of the Seven Conditions and Standards into design and development

- Reasonability, thoroughness, and quality of the MITA SS-A, including business architecture, concept of operations, information architecture, and technical architecture
- Reflection of the Department's MITA goals and plans into actual MES design and development
- Configuration management that is robust and includes Department or developer configuration audits against a starting configuration baseline
- Change management
- Adherence to service-level agreements

SYSTEM/MODULAR DEVELOPMENT

- Completeness and reasonability of MES concept of operations, architecture, and designs
- Accuracy of capture of interfaces and data sharing requirements with systems external to the MES
- Viability and completeness of the data transition plan
- Traceability of requirements through design, development, and testing
- Adequacy of system security and privacy policies, plans, technical designs, and implementations
- Coverage and integrity of all system testing, including stress testing and testing of interfaces between modules and with external partner systems
- Capacity management, including consideration of future contractors' support and release plans for underlying databases, software, and hardware
- Adequacy of disaster recovery planning

The Department PMO will be responsible for communicating specific IV&V requirements in project planning.

CMS CERTIFICATION PROCESS

The Contractor will be responsible for providing and maintaining a solution that meets all applicable Medicaid Enterprise Certification Toolkit (MECT) checklist items, and supporting the review and validation of those items by the Department, IV&V Contractor, and CMS. Certification will be conducted in a modular fashion or by CMS' direction, so the Contractor will be assessed on products and services provided. The Contractor shall become knowledgeable of all MECT-related items associated with the solution offered.

The Point of Contact for CMS certification is the IV&V Contractor. The Contractor will provide certification support tasks including:

- Assisting with certification planning activities
- Providing draft adjudication of certification criteria that shows acceptance or rejection
- Providing certification review progress reports
- Supporting risks, recommendations, and MITA updates

CMS will review and provide final decisions on certification. The DMAS PMO will work closely with the Contractor, CMS, and the IV&V Contractor to ensure all certification checklist items have been satisfied and certification can be achieved. The Contractor will ensure the solution meets MITA 3.0 Framework and Seven Conditions and Standards requirements. The IV&V and CMS Certification Requirements are provided in Appendix J.5 – IV&V and CMS Certification.

3.a.5. AUDIT SUPPORT

Audit Support Requirements pertain to the business process associated with the daily operations of the DMAS Internal Audit Division.

Primary categories of requirements include external audit of the Contractor and its subcontractors, audit trails and logs, access to records for audit, record retention, and corrective action plans for audit findings. Audit Support Requirements can be found in Appendix J.6 – Audit Support.

3.a.6. TURNOVER

TURNOVER AT CONTRACT CONCLUSION

Prior to the conclusion of the contract with the Department, the Contractor will provide assistance in turning over the MES Solution to DMAS or a successor Contractor. The Turnover objectives require that the Contractor provide an orderly, cooperative, comprehensive, and controlled transition to the Department. The Turnover shall result in minimal to no disruption of processing or interaction with services provided to members, providers, or Department operations staff.

The Department's responsibilities for the Turnover include:

- The Department will notify the Contractor of DMAS' intent to terminate and transfer the data, custom interfaces, and any reusable developed code funded by CMS and the State at least 12 months in advance of the end of the Contractor's contract in a document known as the Turnover Notification Letter.
- The Department will review and approve or deny the deliverables identified in Appendix I – Milestones and Deliverables. If denied, the Contractor will need to remedy the defects in the Turnover until approved.
- The Department will report and coordinate the resolution of issues between the current Contractor and the new Contractor.
- The Department will chair a weekly meeting with the Contractor, provide feedback on the Contractor's plan and weekly reporting status, and participate in risk management, issues management, and any corrective action plans for late deliverables.
- The Department will participate in a post-turnover review period and obtain post-turnover support from the current Contractor for up to 6 weeks.

Additional information regarding Turnover Requirements can be found in Appendix J.7 – Turnover.

3.a.7. TECHNOLOGY

3.a.7.1. SEVEN CONDITIONS AND STANDARDS

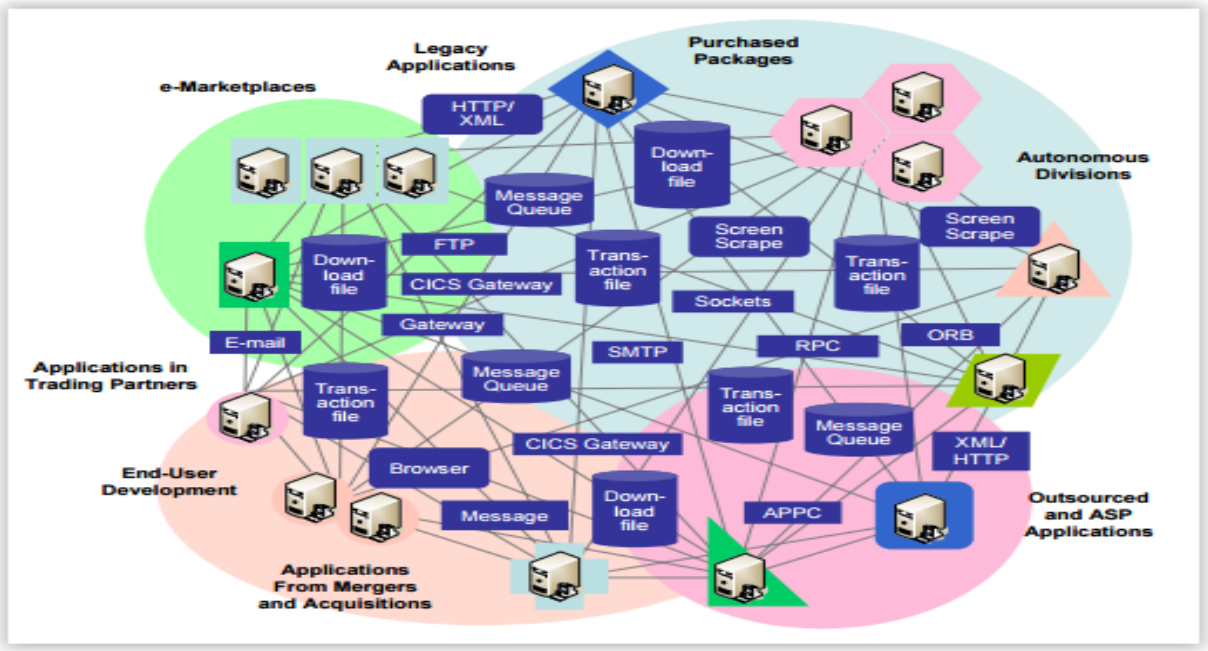
The CMS Seven Conditions and Standards focus on key elements of development and deployment to improve the likelihood of successful system implementation and operation. The goal is to build a common framework for Medicaid to plan, architect, and engineer modern Medicaid IT systems that are more stable and uniform, supporting more efficient, cost-effective, and modern processes and systems.

A typical legacy MMIS has the following limitations:

- Highly interconnected systems using point-to-point interfaces require pervasive modifications to accommodate changes to business requirements, making them difficult to change
- Users navigate through multiple functional systems to perform a single task
- A typical legacy MMIS, to a large extent, is platform dependent, and does not communicate easily across functional or technical boundaries, which makes it difficult to share information or reuse functionality
- Finally, the rate of policy change within Medicaid continues to increase from both Federal and State perspectives, as legislators continue to make adjustments to the program. Legacy development systems suffer from the lack of productive development tools and methodologies that are common in today's development platforms. Typical legacy MMIS managers frequently have considerable difficulty keeping up with the demands of the turbulent environment of rapidly evolving Medicaid policy. Coding conventions and software rules tend to be so intricately woven throughout a typical legacy MMIS, that to make even a minor change inevitably results in large, costly, and time-consuming rewrites.

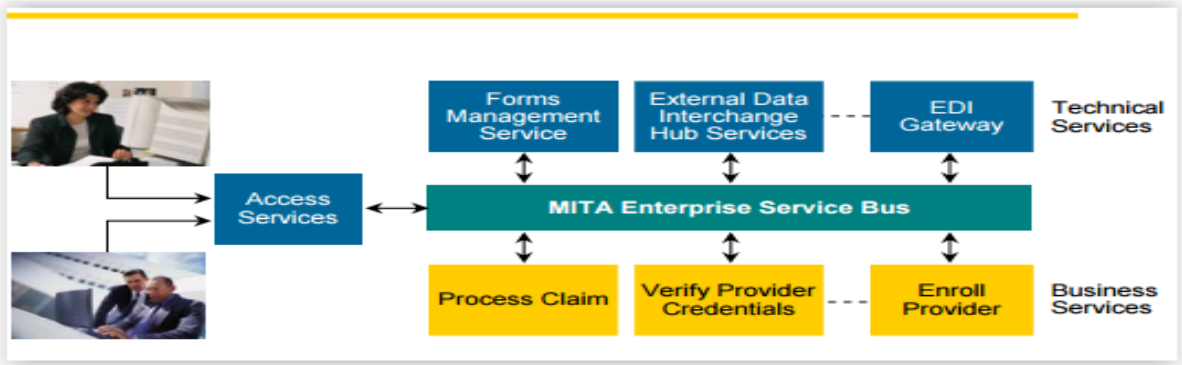
Following is a typical legacy MMIS architecture that demonstrates typical complexity and limitations.

Figure 5: Typical Legacy MMIS Architecture



CMS' MITA 3.0 Framework advocates SOA with modularized applications pertaining to business processes to reduce system complexity. Business functions such as "check the eligibility of a member", and "checking the status of a claim", can be exposed as modularized services in an SOA environment, which will help to: increase business agility, use business needs to drive the enterprise, facilitate greater reuse of components, increase operational flexibility, and allow for the downstream insertion of new technologies when needed.

Figure 6: A Service Oriented Medicaid Enterprise System (MES) Architecture

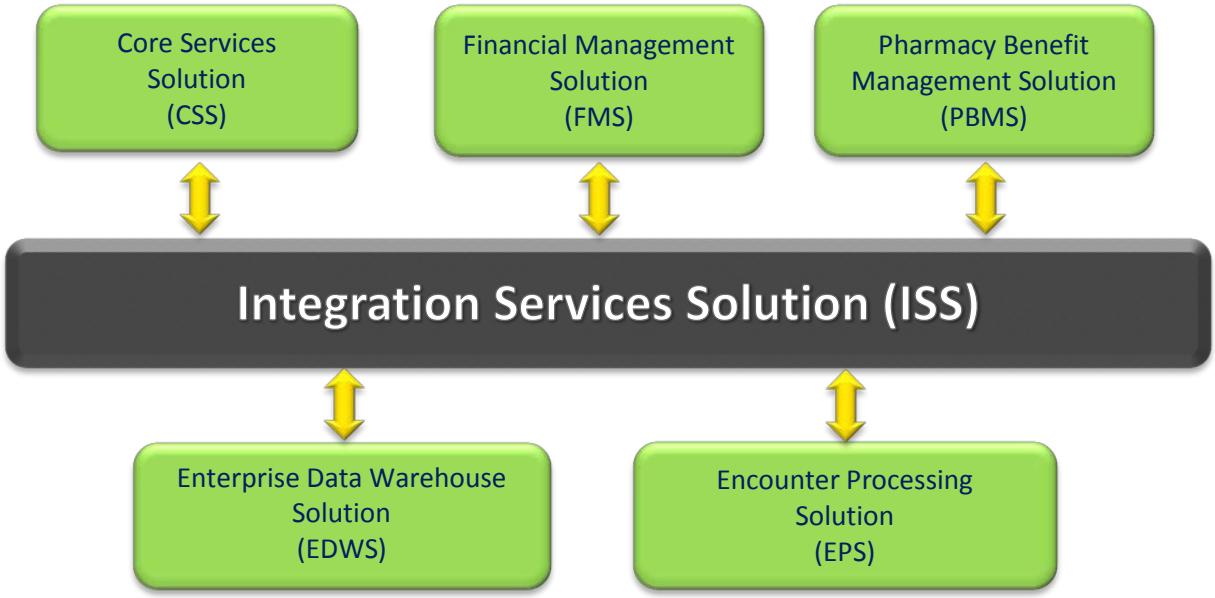


MODULARITY STANDARDS

The MES is envisioned to consist of a modular architecture, pertaining to major business domains, such as Core Services, Pharmacy Benefit Management, Encounter Processing, Member Management, Provider Management, Financial Management, and Data Analytics. The business processes within the major business domains will also be developed as modular, configurable applications. The role of the ISS

Contractor is to incorporate these loosely coupled modular systems into a cohesive MES. An Enterprise Service Bus will be used as the integration vehicle through which all communication must flow and the ISS Contractor will orchestrate the secure data exchanges between the modular components. Following is a high-level schematic representation of the concept of operations of the new MES.

Figure 7: High-Level Schematic Representation of the COO of the new MES



MITA Condition

The strategic initiatives and objectives identified in the recently completed MITA 3.0 SS-A serve as the input to the MITA Roadmap. This Roadmap identifies several initiatives that are targeted to advance DMAS capabilities as described in the MITA 3.0 Framework. As documented in the MITA SS-A, DMAS is committed to move toward and achieve a Level 3 maturity within the business, information, and technical architectures.

Industry Standards Condition

The MES will use standard HIPAA transactions like X12, HL7, and CAQH-CORE standards wherever applicable for data exchanges. The applications and services shall be deployed on flexible infrastructure, where resources can be provisioned in real time to meet spikes in user demand. All modules and applications within the MES must comply with the following mandated standards and protocols: (1) accessibility standards established under Section 508 of the Rehabilitation Act, or standards that provide greater accessibility for individuals with disabilities, and compliance with Federal civil rights laws; (2) standards adopted by the Secretary under Section 1104 of the Affordable Care Act; and (3) standards and protocols adopted by the Secretary under Section 1561 of the Affordable Care Act.

Leverage Condition

COTS and cloud-based SaaS are being sought over custom built solutions for the MES solutions. For example, it should be possible for the EDI Solution, developed as part of the MES, to be leveraged by other Medicaid agencies and Federal agencies to securely exchange standard HIPAA transactions.

BUSINESS RESULTS CONDITION

MITA's Business Results Condition mandates accurate and timely processing of claims (including claims of eligibility), adjudications, and effective communications with providers, beneficiaries, and the public. The Contractor is expected to consistently meet or exceed operational performance standards over the life of the contract.

REPORTING CONDITION

The EDWS, developed as part of the MES, will develop the necessary Federal reports, such as T-MSIS, MARS, Program Integrity (SURS), and other ad hoc reports. Each Contractor is required to maintain all the transactional reports and any Department-specific reporting requirements for effective and efficient program management, and to promote effective customer service and better clinical management and health services to beneficiaries.

INTEROPERABILITY CONDITION

The MES shall ensure seamless coordination and integration across applicable State and Federal systems, including eligibility, Medicaid systems, Health Insurance Marketplaces, and Health Information Exchanges. It shall also allow interoperability with public health agencies, human services programs, and community organizations providing outreach and enrollment assistance services. The integration platform (i.e., Enterprise Service Bus) will be leveraged to connect the heterogeneous system using standard protocols in data exchanges and security.

The Contractor is expected to consistently meet or exceed the above CMS's Seven Conditions and Standards over the life of the contract. The requirements related to the Seven Conditions and Standards can be found in Appendix J.8 – Seven Conditions and Standards.

3.a.7.2. HOSTING THE SOLUTION

The Contractor shall provide two hardware hosting options:

1. The Contractor is required to offer and price the Solution hardware hosted at a location determined by the Contractor. The Contractor will need to demonstrate that costs associated with the hardware hosting, outside of VITA and DMAS, will be cost effective relative to the VITA hosting solution, yet meet all of the security and operational requirements.
2. The Contractor shall also offer and price a second option for hosting the Solution hardware at VITA in the Chesterfield, VA offices. The Contractor is required to comply with VITA standards and meet VITA-approved SLAs. Please refer to Appendix A – Service-Level Agreements for SLA requirements and additional information.

3.a.7.3. SECURITY/COMPLIANCE AUDIT MANAGEMENT

SECURITY

MES security provides a COTS identity management system and utilizes automated processes (e.g., workflows, certificates, credentialing, etc.) to provision and manage user accounts. The MES Solution will be a collection of modular component systems whose locations can vary in terms of the hosting

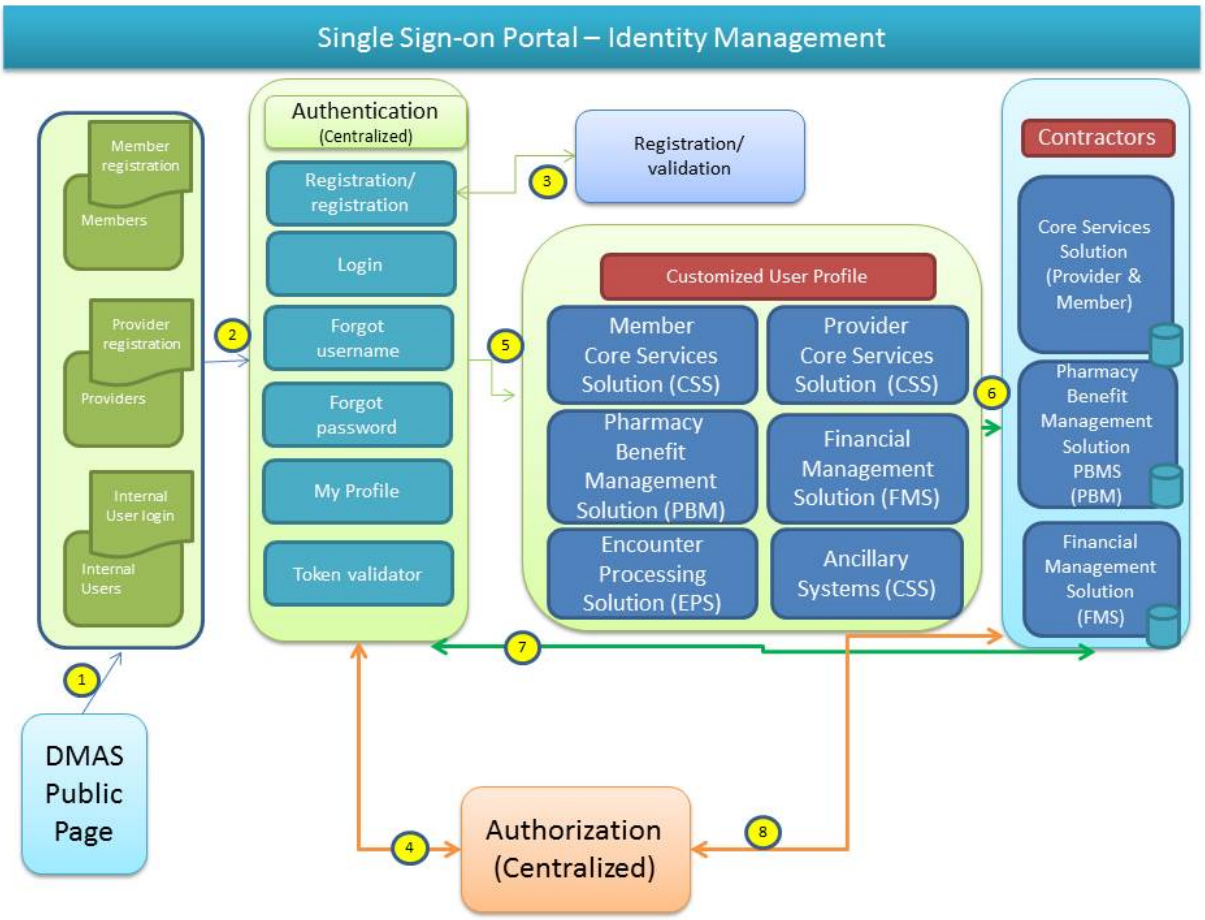
facility. Each component system will need to engage in secured communications, exchanging transactions with a centralized Enterprise Service Bus.

DMAS, and its business partners, have a shared responsibility to meet the HIPAA and Commonwealth requirements relating to the protection of Electronic Protected Health Information (ePHI). To meet this responsibility, DMAS has identified the need for contractors to provide compliance tools, which will aid in managing users across these various component systems, monitor system activity for unusual behavior, and support individual rights as specified in the HIPAA and Commonwealth regulations. Additionally, these compliance tools will use data analytics functionality to alert security management of unusual trends, and the violations of defined thresholds.

MES Single Sign-on Solution

The MES single sign-on components for authentication and authorization rely on identity, credentials and access management (ICAM) accomplished through central ICAM/SSO web services. The following diagram depicts the concept.

Figure 8: High Level Diagram for Identity and Access Management



Informational Only (Steps 1-5)

1. User comes from DMAS public page and selects the type of user they are (Member, Provider, or Internal User).
2. If the user is already registered, they can log in using their credentials. If not registered then they fill out the fields required for registration for their user type.
3. Information provided by the user as part of registration is validated with internal and external sources based on user type.
4. Upon successful validation of registration, user information is sent to the centralized authorization to trigger the DMAS role/access level authorization process. A DMAS workflow process shall be used to assign DMAS users to contractor role identifiers.
5. Upon successful login, the user shall be directed to customized user profile (secured page). After the role/access level has been set in the authorization system, users shall see the available applications on their customized user profile (secured page).

Contractor Responsibilities (Steps 6-8)

6. When users select an application from the customized user profile (secured page), they shall be directed to the corresponding contractor's application. At that time, the customized user profile (secured page) shall send the secured token and user information to the contractor's application.
7. The contractor application shall verify the secured token with the token validator service. Once it is validated by the token validator service, the service sends the user role/access level identifiers back to the contractor application.
8. The contractors' application synchs periodically with the user role/access level as set up by DMAS in the authorization system.

The Contractor shall address and meet the detailed requirements relating to Security as described in Appendix J.9 – Security/Compliance Audit. Additionally, the Contractor shall address and meet the detailed requirements relating to Single Sign-on as described in Appendix J.10 – MES SSO Global Security.

COMPLIANCE AUDIT

The Contractor's system will include audit logs of all application and engineering activities on the production systems. These logs will be available online, behind a front-end presentation toolset providing queries, reports, and analytics on any log selected. Log retention will be seven years based on Library of Virginia standards, which exceeds the HIPAA requirement of six years.

Each participating Contractor provides DMAS with annual penetration and quarterly vulnerability reports. The proposed solution schedules management reports covering key areas of concern and addressing typical control questions required by *VA IT Security Standard COV SEC501-09* (available on the VA VITA website) and NIST 800-053 REV 4 (or latest) with online reporting. Outside audit tools for guest auditors from the Federal Office of the Inspector General (OIG), CMS, Virginia Auditor of Public Accounts (APA), or any other authorized auditors as determined by DMAS Internal Audit will be permitted to be installed at DMAS request. Security audits will be provided by independent audit firms every two years; the Auditor of Public Accounts will audit every year.

The Contractor conducts risk assessments and other required deliverables, e.g., a CMS annually updated Security Plan (or more often as major system changes occur), which includes an annual CMS System Security Plan (SSP) Workbook FINAL Version 1.5 July 31, 2012 (or latest), and a System Security Plan Template with required and updated annual attachments. These documents are submitted to DMAS Chief Information Security Officer (CISO) or Information Security Officer (ISO) for annual review and are required to be updated quarterly.

Once DMAS has reviewed and accepted as complete, the SSP Workbooks and Templates will be shared with its sister agency, the Virginia Department of Social Services (VDSS), for their review and acceptance. Subsequently, VDSS will review, approve, and provide assurance to CMS that DMAS and VDSS have reviewed and accepted these SSP Workbooks and Templates. More detail pertaining to the Security/Compliance Audit Requirements can be found is Appendix J.9 – Security/Compliance Audit.

Business Continuity and Disaster Recovery

Availability

The Contractor's Solution shall be available for transaction processing 24/7/365. Contractor will maintain the proposed solution in a highly redundant manner that supports rolling updates. Rolling updates will allow for the Contractor to maintain 24/7/365 functionality. The following Recovery Time Objective (RTO) and Recovery Point Objective (RPO) guidelines shall apply to the proposed solution:

- **RTO:** In the event of an incident that causes the system to become unavailable or unable to process transactions, Contractor will restore services within 120 clock minutes, regardless of the time the incident occurred. Service unavailability is defined as the point in time at which transaction processing ceases. Service restoration is defined as the point in time which transaction processing recommences.
- **RPO:** The system shall preserve committed transactions in a manner that ensures no greater than 10 minutes of committed transaction data is lost as the result of an unplanned outage.

Business Continuity (BC)/Disaster Recovery (DR)

The Contractor shall provide a BC/DR Plan for the technology and infrastructure components, as well as for the business area operations continuity and contingency plan. The Contractor, together with the Department, shall affirm the BC/DR plan, including the essential roles, responsibilities, and coordination efforts necessary to support recovery and business continuity.

The Contractor shall address a wide range of infrastructure and services recovery responsibility associated with, and/or arising from, partial loss of a function or of data for a brief amount of time to a worst-case scenario in which a man-made or natural disaster results in data center equipment or infrastructure failure or total system failure. It is the policy of the State that a Business Continuity/Disaster Recovery Plan is in place and maintained at all times. The plans contain procedures for data backup, disaster recovery including restoration of data, and emergency mode operations. The plans shall include a procedure to allow facility access in support of restoration of lost data and to support emergency mode operations in the event of an emergency. Also, access control will include procedures for emergency access to electronic information.

The Contractor shall be protected against hardware and software failures, human error, natural disasters, and other emergencies which could interrupt services. The plan shall address recovery of business functions, business units, business processes, human resources, and the technology infrastructure.

The Contractor shall develop a Business Continuity Plan which includes the following:

1. Identification of the core business processes involved in the solution
2. For each core business process:
    a. Identification of potential system failures for the process
    b. Risk analysis
    c. Impact analysis
    d. Definition of minimum acceptable levels of outputs

3. Documentation of contingency plans
4. Definition of triggers for activating contingency plans
5. Discussion of establishment of a business resumption team
6. Maintenance of updated Disaster Recovery Plans and procedures

The Contractor shall prepare a Disaster Recovery Plan which addresses the following:

1. Retention and storage of backup files and software
2. Hardware backup for critical system components
3. Facility backup
4. Backup for telecommunications links and networks
5. Staffing plan
6. Backup procedures and support to accommodate the loss of online communications
7. A detailed file backup plan and procedures, including the offsite storage of crucial transaction and master files; the plan and procedures shall include a detailed frequency schedule for backing up critical files and (if appropriate to the backup media) their rotation to an offsite storage facility. The offsite storage facility shall provide security of the data stored there, including protections against unauthorized access or disclosure of the information, fire, sabotage, and environmental considerations
8. The maintenance of current system documentation and source program libraries at an offsite location

The Disaster Recovery Plan and results of periodic disaster readiness simulations shall be available for review by State or Federal officials on request. This report and test results shall be filed annually with the Department ISS Contractor Point of Contact and any other agency authorized by the State or the Federal government. This report and test results shall be approved by the Department.

The Contractor will conduct annual, comprehensive technical and operational tests of the Business Continuity and Disaster Recovery plans. The Contractor will conduct role plays and update the Business Continuity and Disaster Recovery plans based on the results of testing with findings for improvement after each annual test and train on the Department approved changes. Please see Appendix J.25 – Disaster Recovery for more detailed information pertaining to the requirements.

INTEGRATION SERVICES

CMS's MITA 3.0 Framework advocates service oriented architecture within the modularized applications pertaining to business processes. The key advantage of service oriented architecture is its technology and platform independence, which provides the ability to integrate the best of the breed solutions. These solutions have to communicate with each other to exchange data and messaging, thereby facilitating a cohesive MES that will comply with the Seven Conditions and Standards. To achieve this overall system, a rule based, modularized, highly decoupled, service oriented software architecture is essential.

The role of an ISS Contractor in the MES is to provide secure data exchange between the application modules within an agreed upon SLA using canonical data format, standards and protocols.

Subject to the implementation period of performance, a Contractor may send or receive data through the MES ISS Contractor to a different MES Contractor in the Transition Phases of moving toward a MES environment. Every effort will be made to standardize the interchange upfront. However, the Contractor may be called upon to change to an exchange-based interface when onboarding new solutions.

Contractor shall facilitate the secure exchange of data with other applications in the MES within the agreed upon SLA through synchronous real time web services and/or asynchronous services using Queues. The Contractor shall have the ability to produce/consume Simple Object Access Protocol (SOAP), Representational State Transfer (RESTful) web services. More information regarding the specific system integration requirements can be found in Appendix J.11 – Integration Services.

RULES ENGINE

A rules engine, in association with the solution software, will help provide the needed flexibility, configurability, and capacity to support the diverse and complex DMAS programs. The Department requires the implementation of a rules engine for domain based business logic that provides Department users with the ability to make ad hoc configuration changes to the greatest extent practical while still maintaining system integrity.

Additional details regarding Rules Engine Requirements can be found in Appendix J.12 – Rules Engine.

WORKFLOW

To increase operational efficiencies and the quality of the Virginia's Medical Assistance Program, the Department's vision of a modern Solution will assist in process improvement by offering automation and workflow management tools. More information regarding Work Flow requirements can be found in Appendix J.13 – Workflow.

PORTAL

The MES will use web based user interfaces for existing and potential new users to facilitate support and use of current and future Medicaid related services. Any and all websites and/or portals under the MES environment will be required to provide appropriate and expedient access for Virginia residents, providers and support staff, and other participants of services provided under the MES authority. The portal shall support token based secure single sign-on. This access will be required 24 hours a day, 7 days a week, and 365 days a year.

The Contractor shall address the additional requirements relating to the Website Technical Requirements as described in Appendix J.14 – Portal.

3.a.8. ELECTRONIC DATA INTERCHANGE

The Contractor shall exchange with the DMAS EDI Gateway information that is needed to support any electronic standard healthcare transactions that are mandated by DMAS and any other transactions required to operate its solution. The Contractor shall send and accept batch and real-time representations of applicable HIPAA mandated and other standard health care transactions. The information exchanged will support a variety of formats, including but not limited to X12, NCPDP, XML, and JSON formats.

It is the objective of DMAS for the Department and the Contractor to mutually participate in and support a versatile process to send and receive all batch and real-time HIPAA mandated and other standard compliant transactions that flow through an EDI exchange that is operated by DMAS.

See Appendix J.15 – Electronic Data Interchange for more details on the EDI Requirements.

3.a.9. Documentation Management

The Contractor shall provide a Documentation Management system that stores both operational artifacts, such as hard-copy inputs, report outputs, and any documents received, as well as system documentation, such as design documents, operations manuals, and training materials.

Implementation of the Contractor's Solution must include the conversion of all of the contents currently stored in the legacy ECM that are needed by DMAS and the Contractor to utilize the solution. The proposed solution must include an integrated automated workflow and provide comprehensive document storage and easy access to all documents from the user's desktop. The Contractor must meet the requirements relating to documentation management as described in Appendix J.16 – Documentation Management.

3.a.10. Enterprise Data Warehouse Solution

DMAS, as a part of the new MES initiative, will establish a centralized EDWS and business intelligence platform where disparate data sources will be integrated, transformed, cleansed, and stored in a centralized repository. This single source of truth will enable timely and consistent reporting and provision data access for all user levels across DMAS, including Executive Management, Business Managers, External Stakeholders, and Data Analysts. The intent is to provide decision support to all Medicaid business processes and deliver enterprise reporting.

Ultimately, the goal is to enable advanced analysis, such as continuity of care studies that may include descriptive, prescriptive, predictive, interactive, and simulative study of claims, clinical data, and related social data. EDWS requirements are outlined in Appendix J.17 – Enterprise Data Warehouse.

3.a.11. Conversion

Introduction to Conversion

The conversion task involves planning, identifying, and analyzing conversion specifications, as well as preparing and executing a conversion plan with specifications for developing and testing conversion programs and converting the data.

Conversion Challenges

Note that the following conversion circumstances have a tendency to lead to project failures:

- Unexpectedly high data volume
- Complexities inherent in defining the relationship between source and target data structures
- Differences in the data required for processing between legacy and new systems
- History of changes to processing requirements and valid codes that may result in data inconsistencies and missing data conditions

Conversion Plan Requirements

The Conversion Plan shall define the strategy, preparation, and specifications for converting data from the source system(s) to the target system(s).

Data Quality Assessment

The plan shall also describe the approach to data quality assessment, and error correction, before data is moved to the new (or converted) system—meaning that the plan shall:

- Explain the manual and/or automated controls and methods that will be used to validate the conversion
- Describe the process for data error detection and correction, and the process for resolving the causation of anomalies
- Identify the types of data quality problems that may occur, including but not limited to the following considerations:
  - ✓ **Data type redefinitions** (e.g., alphas in dates and numbers, embedded information in codes and intelligent keys, implied content)
  - ✓ **Garbled content** (e.g., multiple uses for a single field, freeform text values, corrupted data, un-initialized data)
  - ✓ **Invalid record relationships** (e.g., broken chains in set relationships, orphan records (on natural key), mismatched keys (set vs. natural key))
  - ✓ **Invalid content** (e.g., values out of defined range, code fields not on a valid list of values or lookup table, blank fields (optionality), inconsistent use of defaults)
  - ✓ **Context changes** (e.g., import of external data, historic changes to operational parameters (system upgrades), synchronization timing of duplicated de-normalized data)
  - ✓ **Behavior issues** (e.g., variations in actual data from planned constraints of size, data type, validation rules, and relationships)

Security and Privacy

The Conversion Plan shall also include any security or privacy considerations associated with the conversion.

Expectations of the Contractor

The Contractor shall convert the historical and active data, including all reports, letters, and imaged documents that are needed by and applicable to the solution. The reports, letters, and imaged documents shall be accessible and made available in the Contractor's solution upon implementation.

The Contractor shall describe its proposed conversion methodology that will become the foundation for the Conversion Plan. The conversion methodology shall clearly identify and define the strategies, activities, and workflow required by the conversion task, including those requisite for contingency planning in the event that it is determined that conversion cannot be accomplished as scheduled. Additional detail pertaining to Conversion Requirements can be found in Appendix J.18 – Conversion.

3.b. Statement of Work – Enterprise Data Warehouse Solution

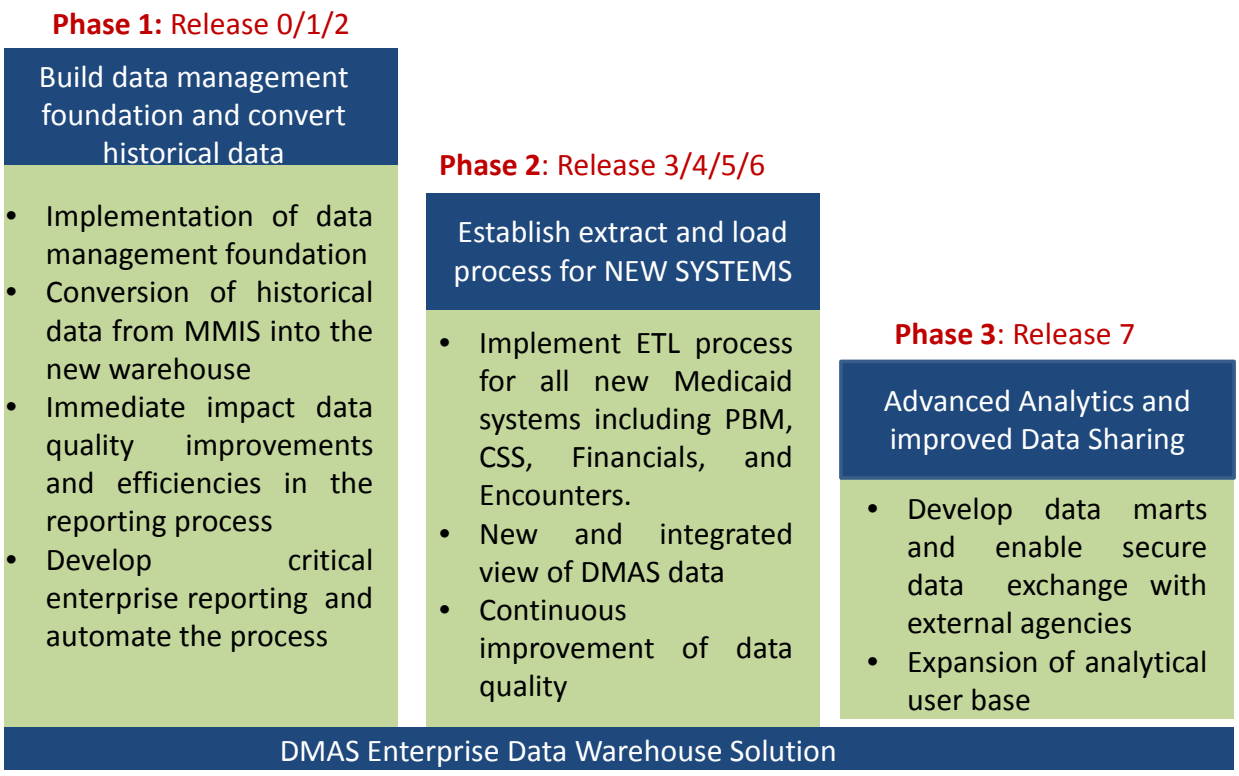
3.b.1. Release Scoping

The goal of DMAS in this procurement is to select an EDWS that serves as a central repository for all of DMAS's relevant data that will enable timely, accurate and consistent information and ultimately, empower the decision makers to make the most informed decisions possible.

DMAS's goal is to implement an EDWS that complies with the Seven Conditions and Standards, as mandated by CMS, in order to provide timely data to help improve the delivery of Medicaid services. The use of the EDWS to provide integrated Medicaid-related program data will provide the State's Medicaid Program with an enhanced ability to gain insights into outcomes and anticipate future needs. Ultimately, the EDWS is expected to facilitate users in answering vital questions relating to the Medicaid program.

The DMAS EDWS project will require multiple phases, each releasing new capabilities, including improved data quality and analytical competences. It is vital that critical functionality and data is made available starting with the EDWS Project Phase 1. The overall release schedule is defined in Figure 9.

Figure 9: EDWS Release Phases



The EDWS implementation is segmented into three (3) phases with subsequent releases within each phase. Moving forward from one release or phase to the next, or moving the solution into production, will require compliance with stage gate criteria. Each gate represents a logical point at which "gatekeepers" can determine whether and how to proceed. Gates also provide an opportunity to assess

the quality of work to date and to alter the course of the project and take remedial actions as necessary. Stage gate acceptance criteria will be prepared for each gate. It will describe the purpose of the gate, issues to be addressed, items for assessment, and expected deliverables.

3.b.1.1. PHASE 1 (RELEASE 0/1/2): BUILD DATA MANAGEMENT FOUNDATION AND CONVERT HISTORICAL DATA

Initially, the EDWS will deliver a strong Medicaid-focused data management foundation to address data integration of historic Medicaid data from the current VAMMIS.

RELEASE 0: INSTALLATION AND ENVIRONMENT SET UP

This Release represents the initial installation including the physical installation and hosting of the EDWS and its components within the DMAS state data center. This installation requires close coordination with VITA and adherence to their published rules and regulations. Creation of the operational environments for development, testing, staging and production will be included in this phase.

RELEASE 1: HISTORIC DATA LOAD FROM LEGACY SYSTEM

Upon completion and acceptance of Release 0, Release 1 representing the historical data load from the VAMMIS, can commence. In this phase, the basic foundation for the DMAS EDWS will be set up to include the following:

- The design and optimization of the data model to store Medicaid data
- Definition of the source to target mappings to extract and transform data into the EDWS
- Implementation of data quality processes

The data management foundation will also provide visibility to information using metadata management capabilities. Ultimately, ten (10) years of DMAS historical data will be loaded into the warehouse.

The Contractor is required to design the data model such that it is sustainable and does not need significant modification when new modular MES systems are implemented. This will also enable DMAS to continue to utilize the reports developed in Phase 1 even after new sources are introduced.

RELEASE 2: ETL CONNECTION FOR EXISTING VAMMIS

In Release 2, an ongoing refresh process to extract and load Medicaid data from existing DMAS systems into the new EDWS will be implemented. These data include all the primary data sets of the Medicaid system (as defined by DMAS) including (but not limited to):

- Member Eligibility
- Providers
- Claims
- Encounters
- Drug and Pharmacy
- Prior Authorization

- Assessment
- Payments and financials
- Reference data management
- Medicare data
- Behavioral health
- Data stored outside of VAMMIS
- Source systems for financial information: VAMMIS, Oracle financials, Third Party Liability Recovery System (TPLRS), Pulse, Cardinals and potentially other smaller data sources.

The EDWS will provide a means for analysts to extract quality data for use in resident enterprise BI tools (such as SAS and Tableau).

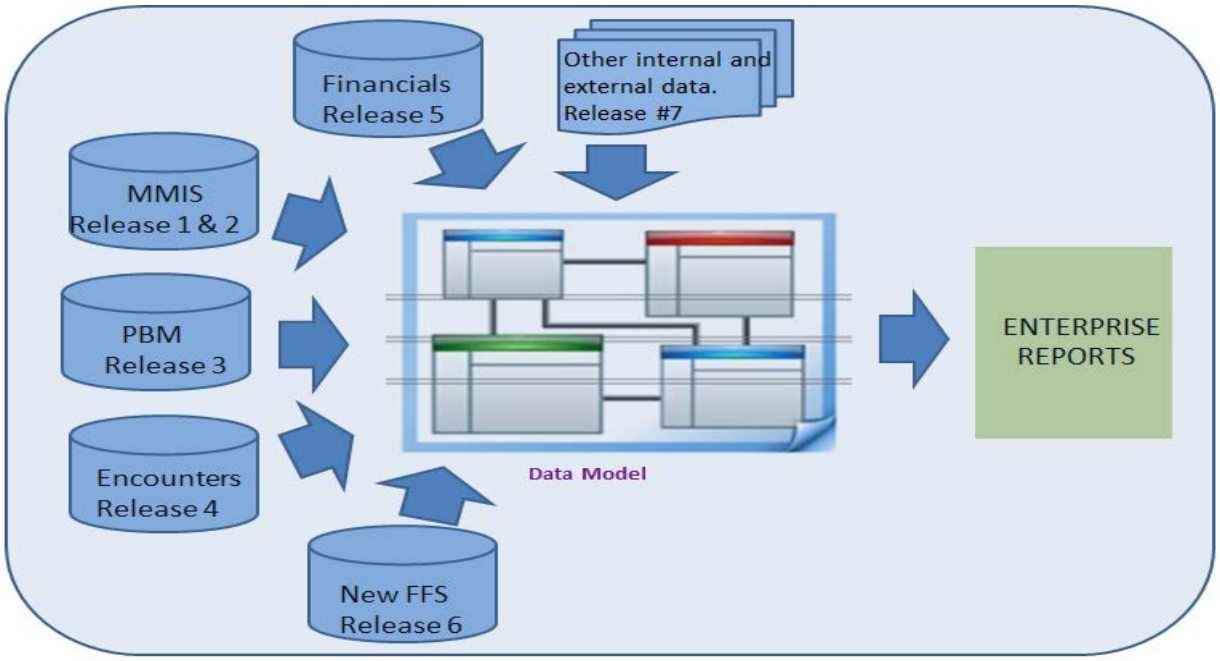
DATA GOVERNANCE SUPPORT

Enterprise Data Governance (EDG) initiative (a parallel work stream) will provide critical guidance, especially during the Release I and II of the EDWS development and implementation, and help ensure the quality, reliability, and timeliness of data provided to EDWS users. The Contractor's approach will include incorporation of DMAS EDG policies and processes (available in the Procurement Library) to support continuous data governance activities and ensure positive control over the processes and methods used to handle data across the Agency.

REGULATORY AND ENTERPRISE REPORTING

Phase 1 also includes the development and conversion of regulatory, CMS, and Financial reporting, (MARS, SURS, Fraud and Abuse Detection System (FADS), and others as defined by DMAS); please refer to Section 3.b.4, Reporting Requirements. In order to utilize the reports in future phases, it is critical that the data model designed in Phase 1 includes the majority of the key data elements required to generate the reports. Additionally, when new sources are introduced to the EDWS in future phases, there should be very little or no impact to the reports developed in Phase 1 and the reports should continue to be functional.

Figure 10: Data Model Design



3.b.1.2. Phase 2 (Release 3/4/5/6): Establish ETL process for newly implemented systems

Phases 1 and 2, Releases 1 through 6 may proceed concurrently. In Phase 2, each of these releases include building live ETL connections to the new MES components, the implementation of the daily (or defined frequency) refresh processes, and the development of any or all new reports as required by DMAS. Completion of each release requires stage gate criteria to be met prior to the next release start. These releases include the following and are listed in the implementation order according to the schedule in Table 2 below.

Table 2: New MES Components

MES System/Component Name	Type of Data	Comments
Financial Management Solution	➢ Accounts Receivable ➢ Accounts Payable ➢ Fiscal Management ➢ Remittance advice ➢ Contractor Payments ➢ Administrative payments	Data to be refreshed in data warehouse on a weekly basis based on the payment processing schedule
Core Services Solution	➢ Providers (enrolled FFS and MCO) ➢ Capitation payments (the vehicle to payments)	

MES System/Component Name	Type of Data	Comments
Cobblestone - Contract Management System	Contract Management	
Pharmacy Benefit Management Solution	Pharmacy	The Pharmacy team needs capability to share raw data with suppliers for advanced analysis of pharmacy data. One way to address this is by creating data marts that can be shared externally in a secured way
Encounter Processing Solution	Encounter Data captured from MCOs will be captured at different stages within the encounter process ➢ Initial EDI ➢ After Compliance ➢ Post Adjudication Other claims processed outside of DMAS by ASOs will also be managed by the new encounter system. Example: Dental claims from Dentaquest, Transportation claims from Logisticare, Behavioral Health data and Medicare data.	Detail encounter data will be brought into the warehouse to make the process transparent to the encounter team. The goal is to provide capabilities to query data generated throughout the life cycle of the process. Also, there is a need for Dashboards: to cater to strategic needs of management and Detailed reports: to support ongoing operations and handle errors

3.b.1.3. PHASE 3 (RELEASE 7): ADVANCED ANALYTICS AND IMPROVED DATA SHARING

Lastly, Release 7 Load External data and Data Mart will require all external data sources to be defined and data brought into the data warehouse through developed data extracts and processes. This phase also includes the development of Data Marts within the Data Warehouse environment.

3.b.2. BUSINESS AREA SUPPORT

The following ten (10) Business Area descriptions provide the categories of information that the Contractor must understand in order to address and meet the requirements of the data model defined in Section 3.b.7.1.D, Data Modeling and Data Warehouse Design. These business areas are presented for the purpose of communicating to the Contractor the areas of importance necessary for the creation of an effective Conceptual Data Model.

In order to be successful in meeting the requirements of this RFP, the Contractor must understand the development of a data model in a healthcare Decision Support System, preferably a Medicaid or Medicare environment, including the data to be collected from healthcare claims, enrollment, and other healthcare data entities, and to support the enhanced analysis of the data. Additionally, experience with fraud, waste and abuse analysis would be beneficial.

A DMAS goal in this procurement is for business processes to perform at MITA 3.0 Maturity Level 3 or above.

3.b.2.1. Business Relationship Management

Business Relationship Management (BRM) defines activities undertaken by the Department of Medical Assistance Services (DMAS) when entering into business partner relationships. BRM includes the conditions for the establishment, management, and termination of those business relationships. This business area deals with the standards for interoperability between agencies and partners. The BRM process establishes the interagency service agreement, identifies the types of information to be exchanged, identifies security and privacy requirements, defines communication protocol and oversees the transfer of information, and utilizes a common client release of information authorization form.

DMAS retains the right to establish, monitor, and terminate business relationships, data sharing agreements, data transmissions, authorized data recipients, data exchange standards, and routine modifications to terms, personnel and data requirements as needed to facilitate and achieve its strategic objectives as they relate to the EDWS. Sample data would include standard agreement template, business rules for various types of agreements, data from previous agreements with the same party.

The EDWS will be instrumental in managing the business relationship communication as well as the business relationship information processes (BR02 and BR03). The EDWS will act as the central repository for storing all attributes of the business relationship agreements. This will enable cross-program area coordination in handling and tracking all communications. The EDWS will also accommodate a number of tools to support the management and oversight of business relationships. Business rules in the EDWS will allow for standardization of language across agreements. The EDWS will allow DMAS to use business relationship data to analyze opportunities for improvement, measure stakeholder satisfaction across relationship types and time, and to detect trends in the data.

3.b.2.2. Care Management

Care Management (CM) utilizes specific Federal and State-defined criteria and rules to ensure appropriate and cost-effective health care services are identified, planned, obtained and monitored for clients. It includes activities to confirm delivery of services and compliance with the plan, as well as service planning and coordination, establishing/locating providers, establishing service limits, etc., continuity of care, and advocating for the client.

The care management business area illustrates the growing importance of care management as the Medicaid program evolves. The CM process collects information about the needs of the individual member, plan of treatment, targeted outcomes, and the individual's health status. It also contains business processes that have a common purpose ((i.e., identify clients with special needs, assess needs, develop treatment plan, monitor and manage the plan, and report outcomes and includes processes that support individual care and population management (population management targets groups of individuals with similar needs/characteristics and promotes health education and awareness)). Sample data for this area would include client information, provider/contractor information, payment history information, case history, and assessment and treatment plan protocols.

CM includes disease management; catastrophic case management; Early and Periodic Screening, Diagnosis, and Treatment (EPSDT); population management; patient self-directed care management; immunization and other registries; waiver program case management; as well as future programs and populations. The capability of having individual patient and case manager access to clinical data and treatment history, CM will continue to evolve and increase in importance.

Although CM focuses on populations with special needs, as the Medicaid service delivery system evolves, all beneficiaries could have access to managed care. This will have a significant impact on the CM business area. The CM process will eventually be contracted out to the MCOs for their Medicaid-enrolled members. For DMAS, this will mean that the focus will shift from actual care management to monitoring the care delivered by the MCOs. Although Virginia will continue to address outreach efforts as required by Federal legislation, with an extended role for MCOs, there would be less reliance on a care management system and a much greater need for a reporting and analytics system.

Although the EDWS will not initiate or address any authorizations (i.e., referrals, service, treatment plan), it will be instrumental in nearly all care management business areas. The EDWS will be the central repository for all data (including information relevant to any authorization) and will combine and standardize multiple sources of data. The EDWS will also host a number of analytic tools to support case management efforts and monitor the effectiveness of care to MCO members.

3.b.2.3. CONTRACTOR MANAGEMENT

The Contractor Management (CO) business area manage outsourced contracts, owns and uses a specific set of data (i.e., information about the contractor or the contract), and uses business processes that have a common purpose (i.e., solicitation, procurement, award, monitoring, management, and closeout of a variety of contract types).

The Contractor Management business process will become increasingly important to DMAS and, as the State moves toward a managed care Medicaid model, it will become the primary focus due to the nature of multiple-contractor operations. In the Contractor Management business area, healthcare service delivery contracts (i.e., managed care or dental care) and administrative service contracts (i.e., fiscal agent, enrollment broker, etc.) will be treated as single business processes even though the input and output data and business rules may differ.

The switch to a Medicaid MCO model will impact the Contractor Management business area in several ways: 1) MCOs will be contracted with Health Services contracts, 2) service-level agreements (SLA) and key performance indicators (KPI) will be required by the Business Results Condition of the CMS Seven Conditions and Standards, and 3) MCOs will be required to report data which meets the Reporting Condition of the CMS Seven Conditions and Standards.

The DMAS EDWS would be instrumental in establishing a central repository for all contract related documentation, accessible by approved staff across the Agency. The EDWS would also allow the Agency to streamline and automate some processes-- eventually eliminating processes which are currently predominately manual and labor intensive. The EDWS will allow DMAS to log, track and analyze contract communications and other outreach efforts. Future activities might include those actions which may aid in the identification of areas for improvement.

3.b.2.4. ELIGIBILITY AND ENROLLMENT MANAGEMENT

The Eligibility and Enrollment Management (EE) business area is a collection of eight business processes involved in the activity of the determination of eligibility and enrollment for new applicants, redetermination of existing members, enrollment of new providers, and revalidation of existing providers. The provider enrollment business process and other provider-related business processes focus on patient safety and fraud prevention through functions such as determining screening level (i.e., limited, moderate, or high) for provider verifications. These processes share a common set of provider-

related data for determination of eligibility, enrollment, and inquiry to provide services. The EE business area is responsible for the eligibility and enrollment information of the member as well as providers.

Currently, the EE business process is somewhat challenged by fragmented systems and processes across agencies and other entities. In the future, DMAS expects participation from more external entities. DMAS would like to standardize the EE provider processes so that providers would not use different application forms, communication protocols, or processes, regardless of the program, agency, or MCO. The EE member process should also be standardized so that information is standardized across application forms, communication protocols and processes, regardless of program, eligibility determination source or benefit package.

The EE business processes take place outside the data warehouse (EDWS) but the information from these processes must be available to the EDWS. Below is a sample of the type of data which the DMAS EDWS expects to capture from the EE business process.

Table 3: Enterprise Enrollment Data Needs

Member Eligibility and Enrollment	Provider Eligibility and Enrollment
Member plan information	Provider information, including demographics, contact information, provider type and provider specialty
Member policy information	Provider network information
Health benefit information, including benefit package and other benefit information	Contract information
Health care premiums, co-payments, deductibles and fees information	Enrollment information (dates active, sanctions, service limitations, etc.)
Member demographics	Payment information
Member application information	Provider taxonomy
Member eligibility information	Service location information
Member enrollment information	Category of service
Member MCO provider information, including provider network information	Services
Coordination of benefits information	NPI and tax identification ID
Information about capitation rates by gender, by age, by locality	Business Arrangement
Health Insurance Marketplace (HIX) information including eligibility and enrollment information	Health Insurance Marketplace (HIX) information including provider enrollment information

3.b.2.5. FINANCIAL MANAGEMENT

The Financial Management (FM) business area is a collection of business processes to support the payment of providers, managed care organizations, other agencies, insurers, Medicare premiums, and supports the receipt of payments from other insurers, providers, and member premiums and financial participation. These processes share a common set of payables- and receivables-related data. The Financial Management business area is responsible for the financial data store.

The FM business processes take place outside the EDWS but the information from these processes must be available to the EDWS. Following is a sample of the types of data which EDWS expects to capture from the FM business process.

Accounts Receivable Management

Manage provider recoupment

- Claims data, including payment information
- Provider data, including provider network and contract information
- Plan data, including policy and fee information
- Health benefit data, including benefit program and benefit information
- Member data, including third-party liability information
- Financial data, including accounts receivable information
- Compliance management data, including compliance incident information

TPL Recovery

- Financial data, including accounts receivable information
- Member data, including enrollment information
- Provider data, including provider network and carrier information
- Health Insurance Marketplace (HIX) data
- Compliance Management data, including compliance incident information

Other Agency Financially-Related Input from

- Department of Motor Vehicles (DMV)
- Veterans Administration (VA)
- Workers Compensation Board
- Immigration and Naturalization Service
- Medicaid Fraud Control Unit (MFCU)

Manage Estate Recovery

- Financial data, including accounts receivable information
- Member data, including demographics
- Claims data, including payment information
- Vital Statistic records
- Social Security Administration (SSA) records
- Centers for Medicare & Medicaid Services (CMS) Medicare/Medicaid Dual Eligibility reporting
- Health Insurance Marketplace (HIX) data

- Judicial records

Manage Drug Rebate

- CMS Unit Rebate Amount (URA) information
- Claims data, including both professional and drug payment information
- Reference data, including drug code and manufacturer information
- Financial data, including accounts receivable information

Manage Cost Settlement

- Claims data, including payment information
- Provider data, including provider network and contract information
- Financial data, including accounts receivable information
- Cost log information sent to Centers for Medicare & Medicaid Services (CMS)

Manage Accounts Receivable Information

- Financial data, including accounts receivable information
- Claims data, including premium and payment information
- Contractor data, including contract information
- Member data, including demographics, spend-down, cost share, and patient liability information
- Provider data, including provider network information
- DOA Cardinal accounts receivable information

Manage Accounts Receivable Funds

- Financial data, including accounts receivable information
- Claims data, including premium information
- Contractor data, including contract information
- Member data, including demographics, spend-down, cost share, and patient liability information
- Provider data, including provider network information

Prepare Member Premium Invoice

- Member data, including demographics, cost share, and premium information
- Claims data, including premium information
- Financial data, including accounts receivable information

ACCOUNTS PAYABLE MANAGEMENT

Manage Contractor Payment

- Financial data, including accounts payable information and Recovery Audit Contractor (RAC) recovery information

- Contractor data, including contract information Member data, including eligibility and benefits information
- Provider data, including provider network & contract information

Manage Member Financial Participation

- Member data, including demographics, cost share, third-party insurance and premium information
- Health Insurance Marketplace (HIX) data, including applicant eligibility and member enrollment information (i.e., dual-eligibility)
- Financial data, including accounts payable information

Manage Capitation Payment

- Financial data, including accounts payable information
- Contractor data, including contract information
- Member data, including eligibility and benefits information
- Provider data, including provider network & contract information

Manage Incentive Payment

- Centers for Medicare & Medicaid Services (CMS) Health Information Technology for Economic and Clinical Health (HITECH) Provider Electronic Health Record (EHR) Incentive Program Registration and Attestation (R&A) System
- Financial data, including accounts payable information
- Contractor data, including contract information
- Member data, including demographics information
- Provider data, including provider network information

Manage Accounts Payable Information

- DOA Cardinal accounts payable information
- Financial data, including payroll, general ledger, and accounts payable information
- Claims data, including payment information
- Contractor data, including contract information
- Member data, including demographics information
- Provider data, including provider network information

Manage Accounts Payable Disbursement

- Claims data, including payment information
- Health Benefit data, including benefit information and fee schedules
- Provider data, including demographic, tax, pay-to and payment routing instructions, liens, garnishments, adjustments, incentives, rates, and contract information

- Authorization data, including authorization and treatment plan information
- Contractor data, including demographic, tax, pay-to and payment routing instructions, liens, garnishments, adjustments, incentives, reimbursement arrangements, rates, stop-loss claim payments, and contract information
- Financial data, including accounting rules, rates, and funding sources
- Member data, including demographics information

Manage 1099

- Financial data, including accounts payable information
- Claim data, including payment information
- Contractor data, including demographics and 1099 information
- Provider data, including demographics and 1099 information
- 1099 Information sent to Internal Revenue Service (IRS)

Fiscal Management

Formulate Budget

- Financial data, including budget information
- Business Activity data, including performance information
- Plan data, including plan information
- Health Benefit data, including benefit information

Manage Budget Information

- Financial data, including accounts payable, accounts receivable, and budget information

Manage Fund

- Financial data, including budget, accounts receivable, and accounts payable information
- Plan data, including health plan information
- Health benefit data, including benefit package and benefits information
- State Financial Management Applications
- Reference data, including code sets information

Generate Financial Report

- Financial data, including accounts receivable, accounts payable, Recovery Audit Contractor (RAC) recoveries, and budget information
- Claims data, including payment information
- Member data, including demographics information
- Provider data, including provider network information
- Reference data, including code set information

3.b.2.6. MEMBER MANAGEMENT

The Member Management (MM) business area supports all aspects of member related activities, such as eligibility, enrollment, member demographics, and the member grievance and appeal process. The MM would encompass all member/applicant communication with DMAS. An individual would be able to communicate via a secure web portal, mail, fax, and phone or in person. Grievances/appeals would be logged, tracked, directed to appropriate reviewers, and researched. Results of hearings will be documented and relevant documents distributed to the member/applicant and electronically stored. The Manage Member Information process would support the management of all member demographic and status information. Members could use a secure web portal to update their own information. DMAS would define what information could be updated directly by members and what transactions would remain in a pending status until approved by the Agency. The Perform Population and Member Outreach process would support the agency in its efforts to reach targeted populations and provide education materials to both current and potential members.

The majority of the MM business processes take place outside the data warehouse (EDWS) but the information from these processes must be available to the EDWS. Following is a sample of the types of data which DMAS EDWS expects to capture from the MM business process.

- Data from other State agencies, enrollment brokers and the Federal Marketplace
- Medical documentation
- Additional documentation of verification requirements
- Testimonies

3.b.2.7. OPERATIONS MANAGEMENT

The Operations Management business area (OM) is a collection of business processes that manage claims and prepare premium payments. This business area uses a specific set of claims-related data and includes processing (i.e., editing, auditing and pricing) a variety of claim forms including professional, dental, institutional, drug and encounters, as well as sending payment information to the provider. All claims processing activity incorporates compatible methodologies of the National Correct Coding Initiative (NCCI). The OM business area is responsible for the claims data store.

With the exception of the Manage Data area of the OM business process, the primary function of the EDWS is not to perform the processes. Information from the OM processes must be available to the EDWS in order to support:

- Research and evaluation of health care activities
- Program utilization and expenditure forecasts
- Policy alternative analysis
- Agency responses to external inquiries
- Matching Medicaid data to other health- and program-related data

Below is a sample of the type of data which the EDWS must capture to support the OM business processes.

- Member data, including demographics, plan data (including health benefit information, e.g., covered services, units, life-time limits, units and funding limits for authorized services, and benefit package-specific rates, etc.), eligibility determination, enrollment, spend-down, third-party insurance information, grievance and appeals, communication, and outreach information
- Care management data, including treatment plan, outcomes, and prior authorization information
- Authorization data, including authorization and treatment plan information
- Contractor data, including provider network, contract information, provider network, enrollment, grievance and appeals, communications, and outreach information
- Provider data, including performing prospective program integrity (e.g., Healthcare Integrity and Protection Data Bank (HIPDB)) and Medicare/Medicaid sanctions history, provider network, contract, eligibility determination, enrollment, grievance and appeals, communications, and outreach information
- Compliance incident data, including anomalies and adverse action information
- Rate setting data, including applicable rates
- Financial data, including accounts payable and accounts receivable information
- Claim data, including payment, in-house claim number, and patient account number, encounters, adjudication, and historical payment information
- Encounter data, including adjudication and encounter payment history information
- Reference data, including filing deadlines, code set, drug formulary, service code formulary, diagnosis related group (DRG), ambulatory payment classification (APC), and National Correct Coding Initiative (NCCI) information
- Plan data, including the Medicaid State Plan, health plan, health benefits, reference, performance measures, and benchmarks information
- Carrier data, including third party policy type, coverage, policy number, effective dates and benefits
- Medicare data, including effective dates, policy type, and policy (HIC) number, Medicare payment, services received and claims information

3.b.2.8. PROVIDER MANAGEMENT

The Provider Management business area is a collection of business processes that focus on recruiting potential providers, maintaining information about current provider, and communicating with the provider community. The goal of this business area is to maintain a provider network that meets the needs of clients, supports providers, and allows DMAS to monitor and reward provider performance and improve healthcare outcomes. The Provider Management Business Area supports all aspects of provider enrollment for Medicaid, waivered services and managed care providers. Providers are enrolled, dis-enrolled, and managed using the various business processes in this business area.

Part of the PM business processes take place outside the EDWS but PM03 Manage Provider Communication, PM04 Manage Provider Grievance and Appeal, and PM05 Perform Provider Outreach

will mainly be functions of the EDWS. Information from all of the PM processes must be available to the EDWS. Following is a sample of the types of data which EDWS must capture to support the PM business processes.

- Provider data, including provider network, contract, demographics, application, eligibility, enrollment, grievance, appeals and communications information
- Financial data, including payment information
- Plan data, including policy information
- Health benefit data, including benefit program/package and other benefit information
- Claims data, including claim status, claims payment and premium payment information
- Care management data, including case management, health record, clinical data information, population health and treatment plan information
- Business activity data, including performance information
- Compliance management data, including compliance incident information
- Insurance Affordability Program data, including eligibility and enrollment information
- Ancillary Communication Tracking Systems: Customer Relationship Management (CRM), Help Desk Log, Protected Health Information (PHI) disclosure log, etc.
- Performance measures data, including agency's objectives
- Provider data store including eligibility, enrollment and provider network information
- Grievance and Appeal data store including case history and Recovery Audit Contractor (RAC) adverse determination information
- Adverse Action data store including case history information

3.b.2.9. PERFORMANCE MANAGEMENT

The Performance Management business area (PE) is a collection of business processes involved in the assessment of program compliance (e.g., auditing and tracking medical necessity and appropriateness of care, quality of care, patient safety, fraud and abuse, erroneous payments, and administrative anomalies). This business area uses information about an individual provider or member (e.g., demographics, information about the case itself such as case manager identification, dates, actions, and status, and information about parties associated with the case) and uses this information to perform functions related to utilization and performance. The Performance Management business area is responsible for the business activity and compliance data stores.

The DMAS data warehouse (EDWS) will be instrumental to overseeing performance management. Using Virginia's Strategic Plan as a guide, the Agency would be able to define what it hopes to accomplish and set out guidelines as to how they hope to accomplish it. Once the Agency's priorities and goals are defined, information from the EDWS will allow DMAS to determine if the Agency is moving toward its desired results. Questions such as "How much are we doing?", "How well are we doing it?", "How have we impacted the well-being of our enrollees?" can be answered through analysis of the data and well-defined performance measures will indicate whether or not we are achieving the desired results. Analyzing performance measures can help the Agency to make informed decisions about next steps.

Clear understanding of the Agency goals will also dictate the language that should be included in our contracts and grants to ensure that these resources are acting in alignment with the Agency's strategic plan. Results will be accomplished when staff understands the Agency's priorities, is invested in the outcomes, and has the ability to engage in improvement activities. In order to engage in these activities, the EDWS must capture the following data:

- Business Activity data, including performance information
- Care Management data, including member health status, clinical data, and treatment outcome information
- Claims data, including payment information
- Compliance Management data, including compliance incident information
- Contractor data, including provider network, contract, and grievance information
- Financial data, including accounts receivable and accounts payable information
- Member data, including demographics, eligibility, enrollment, and grievance information
- Provider data, including provider network, contract, and grievance information

3.b.2.10. PLAN MANAGEMENT

The Plan Management (PL) business area includes eight (8) business processes focusing on strategic planning, policymaking, monitoring, and oversight business processes of the agency. This business area is responsible for primary data from the Medicaid State plan, health plans, and the health benefits process as well as performance measures, reference information, and rate-setting data. The business processes include a wide range of planning, analysis, and decision-making activities. These activities include service needs and goals, health care outcome targets, quality assessment, performance and outcome analysis, and information management.

In Virginia, the State Medicaid model is rapidly shifting toward managed care and, due to this trend; DMAS will require new flexibility in plan management. There will be a need for a system which supports the rapid creation of entire benefit plans as well as configurability at the plan level. CMS requirements and private health industry standards will generate unique services and policies which will require new and innovative health delivery vehicles. Effective plan management will become an increasingly critical component of effective Medicaid management. In order to manage all of this information, the information from the PL processes must first be available to the DMAS data warehouse (EDWS). Below is a sample of the type of data which EDWS must capture to support the PL business processes.

- Plan data, including Medicaid State Plan, policy, health plan, health benefits, performance measures, and benchmarks information
- Business Activity data, including performance information (e.g., Consumer Assessment of Healthcare Providers and Systems (CAPHS) and Healthcare Effectiveness Data and Information Set (HEDIS) measures)
- Financial data, including budget information
- Member data store including applicant or member demographics, enrollment, financial, social, functional and clinical information

- Contractor data, including provider network and contract information
- Provider data, including provider network and contract information
- Health benefit data, including benefit program, benefit and rate information
- Reference data store including code set, drug formulary, and service code formulary information
- Authorization data, including authorization and treatment plan information
- Claims data store including payment history

The specific requirements related to the business areas and processes described in this section can be found in Appendix J.21 – Data Modeling and Appendix J.34 – Reporting.

3.b.3. SECURITY REQUIREMENTS

Global security requirements are covered in Section 3.a.7.3 above. The following security requirements apply specifically to integration.

The integration module is primarily a business to business connection model. Each business partner will be asked to define their access including responsible administrator contact(s). Each user ID will be on-boarded and controlled by the DMAS Office of Compliance and Security. Passwords must meet with complexity and length, as designated by the DMAS Office of Compliance and Security. Passwords will be reset every forty-two days by the Identity Management tool. Identity Management ID's will be terminated every 90 days. On an annual basis or as required by regulation, each authorizing manager must recertify or acknowledge the list of people and their security access. The purpose of which is to identify terminations, transfers, and changes in responsibilities.

The Contractor must construct a security management dashboard displaying statistics on all routine processes, file transfers, etc. A component of the dashboard functionality will be to organize the collected data, develop actionable statistics, and project trends relevant to the data collected. The reporting can be a function of the dashboard (preferably) but can also be a report generated on demand.

Transaction logs will be processed into the security management dashboard, displaying users, transaction volumes, and success / failure status of all transaction through the transaction lifecycle. Trend analysis and predictive analytics are required.

Security Architecture is required to ensure the system meets the standards and guidelines mandated by several organizations for performing business. To design, document, periodically review the security architecture state and make modifications through a formal approval process requires several guidelines to be met. Below sections provides guidelines on expectations during each phase of the project.

1. Security Compliance criteria

   All groups of stakeholders in the enterprise will have security concerns. These concerns might not be obvious as security-related concerns unless there is special awareness on the part of the ISS Technical architecture Owner. To assist in fact collection to effectively address all security concerns, these are a few key topics to consider. They are part of the 8A's security principles and guidelines:

   a. **Authentication:** The substantiation of the identity of a person or entity related to the enterprise or system in some way.

b. **Authorization:** The definition and enforcement of permitted capabilities for a person or entity whose identity has been established.

c. **Audit:** The ability to provide forensic data attesting that the systems have been used in accordance with stated security policies.

d. **Assurance:** The ability to test and prove that the enterprise architecture has the security attributes required to uphold the stated security policies.

e. **Availability:** The ability of the enterprise to function without service interruption or depletion despite abnormal or malicious events.

f. **Asset Protection:** The protection of information assets from loss or unintended disclosure, and resources from unauthorized and unintended use.

g. **Administration:** The ability to add and change security policies, add or change how policies are implemented in the enterprise, and add or change the persons or entities related to the systems.

h. **Addressing Enterprise Security Risks:** The organization's attitude and tolerance for risk i.e., Mitigation, Avoidance & Acceptance.

2. Security Architecture requirements

   Security architecture is expected to have the following characteristics:

   a. It has its own methods.

   b. It composes its own use cases from various stakeholders' perspectives.

   c. It addresses non-normative flows.

   d. It introduces its own unique normative flows.

   e. It introduces unique, single-purpose components in the design.

   f. It incorporates detection and dynamic network monitoring systems for unknown network traffic patterns to issue warnings or call for investigation.

3. This section could be used as a **reference guideline** for Security Risk factors collection

Table 4: Reference Guidelines for Security Risk Factors

Phase	Guidance
Requirements Gathering Phase	Security Policy and Security Standards should become part of the Requirements Management process. Monitor for new security requirements. Typical sources include: ➢ A new statutory or regulatory mandate ➢ A new threat realized or experienced ➢ A new architecture initiative discovers new stakeholders with new requirements For the 1st and 2nd, these new requirements would be drivers for input to the change management process phase. For the 3rd, a new architecture initiative might be launched to examine the existing infrastructure and applications to determine the extent of changes required to meet the

Phase	Guidance
	new demands.
Planning Phase	➢ Scope the enterprise organizations impacted by the security architecture. ➢ Define and document applicable regulatory and security policy requirements (and communicate them regularly to employees). ➢ Define the required security capability as part of the Architecture Capability. Implement security architecture tools.
Architecture Design Phase	In similar fashion to obtaining management recognition and endorsement for the overall architecture project, obtain the endorsement for the security-related aspects of the architecture development effort. ➢ Define the security-related management sign-off milestones. ➢ Determine the applicable disaster recovery or business continuity requirements. ➢ Identify and document the anticipated physical/business and regulatory environments in which the systems will be deployed. ➢ Determine the criticality of the system: safety-critical, mission-critical, non- critical.
Business Process Design Phase	➢ Determine the legitimate actors who will interact with the system (Business Scenarios can be used). ➢ Produce a baseline of the current security-specific business processes. ➢ Determine whom/how much it is acceptable to inconvenience with security measures. ➢ Identify and document the interconnecting systems beyond project control and determine trust levels. ➢ Determine the assets at risk if something goes wrong (sometimes assets are not tangible; e.g., customer goodwill or a credit rating). ➢ Determine the cost of asset loss/impact in failure cases. Identify and document the ownership of assets. ➢ Determine and document appropriate security forensic processes (which are used to enforce security policies). ➢ Identify the criticality of the availability and correct operation of the overall service. ➢ Determine and document how much security (cost) is justified by the threats and value of the assets (by a risk analysis). ➢ Assess alignment or conflict of identified security policies with business goals. Determine what can go wrong by performing a threat analysis.
Information Systems Design Phase	➢ Assess and baseline current security-specific architecture elements, including a full inventory of architecture elements that implement security services. ➢ Identify safe default actions and failure states, which need to take into account the current state, business environment, applicable policies, and regulatory obligations. ➢ Identify and evaluate applicable guidelines and standards. ➢ In light of the previous risk assessment, revisit assumptions regarding interconnecting systems beyond project control. ➢ Determine and document the sensitivity or classification level of information stored/created/used (include any legislative burdens on the system and/or data). ➢ Identify and document custody of assets.

Phase	Guidance
	➢ Identify the criticality of the availability and correct operation of each function. ➢ Determine whether the system under design is accommodated by existing business disaster/continuity plans. If not, determine the gap and the costs. ➢ Identify what aspects of the system must be configurable to reflect changes in policy/business environment/access control. ➢ Identify the lifespan of information used, as defined by business needs and regulatory requirements. ➢ Determine approaches to address identified risks. ➢ Identify actions/events that warrant logging for later review or triggering forensic processes. ➢ Identify and document requirements for rigor in proving accuracy of logged events (e.g., non-repudiation to ensure logged data has not been tampered with). ➢ Identify potential/likely avenues of attack. Determine what can go wrong.
Technology Design Phase	➢ Assess and baseline current security-specific technologies. ➢ Revisit assumptions regarding interconnecting systems beyond project control. Identify and evaluate applicable recognized guidelines and standards. ➢ Identify methods to regulate consumption of resources. ➢ Engineer a method by which the effectiveness of security measures will be measured and communicated on an ongoing basis. ➢ Identify the trust (clearance) levels for the system. ➢ Identify the minimal privileges required for any entity to achieve a technical or business objective. ➢ Identify mitigating security measures, where justified by risk assessment. Determine what can go wrong.
Solution Design Phase	➢ Identify existing security services available for re-use from the Baseline Architecture and the Architecture Repository. ➢ Implement and deploy mitigation measures addressing identified risks. Evaluate tested and re-usable security software and resources. ➢ Identify new code/resources/assets appropriate for re-use. Determine what can go wrong.
Execution Planning Phase	➢ Assess the impact of new security measures upon other new components or existing systems. ➢ Implement assurance methods by which the effectiveness of security measures will be measured and communicated on an ongoing basis. ➢ Identify correct secure installation parameters, initial conditions, and configurations. ➢ Implement disaster recovery and business continuity plans. Determine what can go wrong.
Post-Implementation and Governance Phase	➢ Establish design and code reviews. ➢ Implement methods and procedures to review evidence that reflects operational stability and adherence to security policies. ➢ Implement training to ensure correct deployment, configuration, and operations. ➢ Determine what has gone wrong by implementing a feedback loop to verify execution

Phase	Guidance
	of the plan and implement corrections if necessary.
Change Management Phase	Changes in security requirements are often more disruptive than a simplification or incremental change. Changes in security policy can be driven by statute, regulation, or something that has gone wrong. Changes in security standards are usually less disruptive since the trade-off for their adoption is based on the value of the change. However, standards changes can also be mandated. ➢ Determine what has gone wrong. Good security forensic practices in conjunction with a written published security policy make determination of this possible. ➢ Incorporate security-relevant changes to the environment into the requirements for future enhancement.

4. Security related artifacts

   Typical security artifacts that should be produced as part of addressing these concerns are as follows:

   a. Business rules regarding handling of data and information assets
   b. Written and published security policy
   c. Codified data/information asset ownership and custody
   d. Risk analysis documentation
   e. Data classification policy documentation

More detailed documentation for each of the project phases are described below in Table 5.

Table 5: Security Artifacts Expected by Project Phase

Phase	Security Artifacts Expected
Requirements Gathering Phase	➢ List of applicable regulations ➢ List of applicable security policies Security team roster ➢ List of security assumptions and boundary conditions
Planning Phase	➢ Physical security environment statement Business security environment statement Regulatory environment statement ➢ Security policy cover letter signed by CEO or delegate ➢ List of architecture development checkpoints for security sign-off ➢ List of applicable disaster recovery and business continuity plans ➢ Systems criticality statement
Architecture Design Phase	➢ List of forensic processes ➢ List of new disaster recovery and business continuity requirements ➢ Validated business and regulatory environment statements ➢ List of validated security policies and regulations ➢ List of target security processes List of baseline security processes List of security

Phase	Security Artifacts Expected
	actors ➢ List of interconnecting systems ➢ Statement of security tolerance for each class of security actor ➢ Asset list with values and owners List of trust paths ➢ Availability impact statement(s) Threat analysis matrix
Business Process Design Phase	➢ List of applicable regulations ➢ List of applicable security policies Security team roster ➢ List of security assumptions and boundary conditions
Information Systems Design Phase	➢ Event log-level matrix and requirements Risk management strategy ➢ Data lifecycle definitions ➢ List of configurable system elements ➢ Baseline list of security-related elements of the system ➢ New or augmented security-related elements of the system ➢ Security use-case models: ✓ Normative models ✓ Non-normative models ➢ List of applicable security standards: ✓ Protocols ✓ Object libraries ➢ Validated interconnected system list Information classification report List of asset custodians ➢ Function criticality statement ➢ Revised disaster recovery and business continuity plans ➢ Refined threat analysis matrix
Technology Design Phase	➢ Baseline list of security technologies Validated interconnected systems list Selected security standards list Resource conservation plan ➢ Security metrics and monitoring plan User authorization policies ➢ Risk management plan ➢ User trust (clearance) requirements

The Contractor will address and meet the additional requirements relating to Security as described in Appendix J.9 – Security/Compliance Audit and Appendix J.10 – MES SSO Global Security.

3.b.4. Reporting Requirements

3.b.4.1. Business Intelligence (BI) Tools

DMAS's goal is to implement a business intelligence solution that includes a modern, industry-standard decision support system (EDWS), which will enable DMAS to capture accurate, current data to be used

in reporting, business performance management, creating and monitoring benchmarks, and performing the predictive analytics needed to meet changing industry and management needs for information.

Although DMAS intends to use SAS as the primary source for business intelligence and data analytics, this need not preclude the Contractor from providing analytic tools within their solution environment. To facilitate data analysis and reporting, pre-defined reports as well as user-defined ad hoc reporting and data queries may be included as integrated functions of the data warehouse. Functions or tools available in the EDWS must include the ability to conduct:

- Ad hoc queries
- Pre-defined reports
- Geographical mapping
- Statistical analysis
- Data mining
- Clinical analysis

For State, Federal, and CMS financial accounting and analysis, we envision that the EDWS will provide tools to create reports based on current DMAS program and expenditure data including claims, recoupments, actual and projected budget information, actual, projected and proposed rate changes, and provider payment data as well as specific non-claim financial data.

DMAS must have the ability to show graphical representations of current status in a dashboard format that can be customized by users to select the key performance areas or status information of interest. It is the intent of the Agency to use Tableau but this would not preclude the EDWS solution from offering a tool to graph reports and make them presentation-ready without the need to export the data to a third-party tool.

The ability to conduct geospatial analysis will also be necessary since some populations or conditions may have a geographical or geospatial aspect which must be considered. This type of analysis employs software capable of geospatial representation and processing, and applies analytical methods to terrestrial or geographic datasets, including the use of geographic information systems.

3.b.4.2. REPORTING REQUIREMENTS

Reporting is one of the MITA Seven Conditions and Standards requirements. The reporting condition requires states to produce transaction data, reports, and performance information that contribute to program evaluation, continuous improvement in business operations, transparency, and accountability.

MITA standards will have an impact on Medicaid reporting: Payment Error Rate Measurement (PERM), Management and Administrative Reporting System (MARS), Surveillance and Utilization Review System (SURS) and Transformed Medicaid Statistical Information System (T-MSIS) reporting requirements will all be affected. Changes in T-MSIS reporting standards will have a major impact on Agency operations: Under the new T-MSIS structure, the format and frequency of reporting is expected to change and the amount of Medicaid data requested is expected to increase dramatically.

The EDWS solution should provide centralized access to data which, in turn, will improve reporting results. DMAS expects the EDWS solution to be flexible and support external BI, reporting and visualization options including but not limited to SAS and Tableau, as well as other reporting tools, that

provide a variety of graphical and data formats, so that DMAS will have the option to share information through the most appropriate view for its intended audience.

The EDWS solution must provide the means for completing reports necessary to meet Federal and State rules and regulations for surveillance and utilization review activities, Medicaid management and administrative activities as well as program information for legislators, decision makers and the public. Specifically, the EDWS must provide the ability to produce reports using ad hoc queries and/or pre-defined report parameters or support the use of SAS and other BI/visualization tools external to the EDWS to produce the reports. Weekly reports would include DMAS program enrollment, eligibility and utilization data to support State and Federal budget forecasts, tracking requirements, modeling, and sampling.

3.b.4.3. Advanced Statistical Reporting

Reporting capabilities are essential for DMAS to meet Federal and State rules and regulations. Advanced Statistical Reporting must have the ability to detect waste, fraud and abuse, monitor performance, and support activities associated with care, program and operations management. New health care delivery mechanisms, changing health care payment arrangements, and a new patient-centric focus in the health care industry are changing the needs for data which allow health care organizations to:

- Improve the administration of services
- Conduct advanced data analysis to determine patterns, relationships, and trends
- Assess the efficacy of their programs
- Detect and reduce fraud and abuse
- Interpret disease management and epidemiological trends
- Develop the ability to predict risk, health care costs, and the impact of policy changes

The Centers for Medicare and Medicaid Services (CMS) has identified the need for states to modernize their detection abilities by using advanced statistical methods and graph-pattern analysis methods to identify aberrant billing patterns, whether due to fraud or errors. Identifying anomalies among providers, contractors, trading partners or members, establishing patterns or parameters of acceptable and unacceptable behavior, testing cases against these models, or looking for new and unusual patterns in order to identify outliers that suggest further examination are all outside the scope of standard reporting. These types of deep analyses require more rigorous statistical analysis.

The ability to use predictive analytics, create severity-adjustment methodologies, incorporate robust data sources and harness internal clinical expertise will enable DMAS to examine population health outcomes and develop meaningful physician performance measurements. Advanced reporting techniques, and access to non-traditional MMIS data, would allow DMAS to use traditional medical and pharmacy claims, in tandem with data from other State and Federal sources, to identify and predict health risks and outcomes, identify practice and utilization patterns, identify and rank providers and clients who are outliers, provide reports of provider group and individual billing, and analyze recipient group and individual medical episodes.

DMAS requires reporting tools which will enable the Department to:

- Identify anomalous or outlier data

- Analyze characteristics of individual record instances to assign it to a category.
- Combine data on multiple dimensions to reveal proximity in two or more dimensions.
- Analyze associations between specific instances of underlying data
- Substitute and score word and phrases using wildcards and weighing, stemming to identify root words, etc.
- Utilize keyword extraction, language support, etc. for text mining
- Automatically roll up the terms/texts to the highest value based on weights in a document
- Generate summary statistics for various usages including but not limited to words that are searched for often, frequently replaced words, etc.
- Handle large datasets with a wide range of variables and attributes to examine the broadest range of correlations while minimizing variance and estimation errors
- Manipulate data through scoring, grouping, classification, clustering and segmentation
- Summarize grouping functions such as count, max, min, sum, average, standard deviation, etc.
- Support clustering, decision trees, linear regression, logistical regression, Chi-square, analysis of variance and sequence clustering analysis, etc.
- Estimate goodness of fit, skewness, kurtosis, normality, collinearity, heteroscedasticity, etc.
- Perform categorical data analysis, basket analysis and support cluster analysis
- Have the flexibility to produce reports of varying levels of detail from high-level ones designed to measure general trends to detailed ones that support drill-down capabilities, multiple cross-tabulations (e.g., by demographics, geography and managed care plan), sub setting, modeling, and forecasting

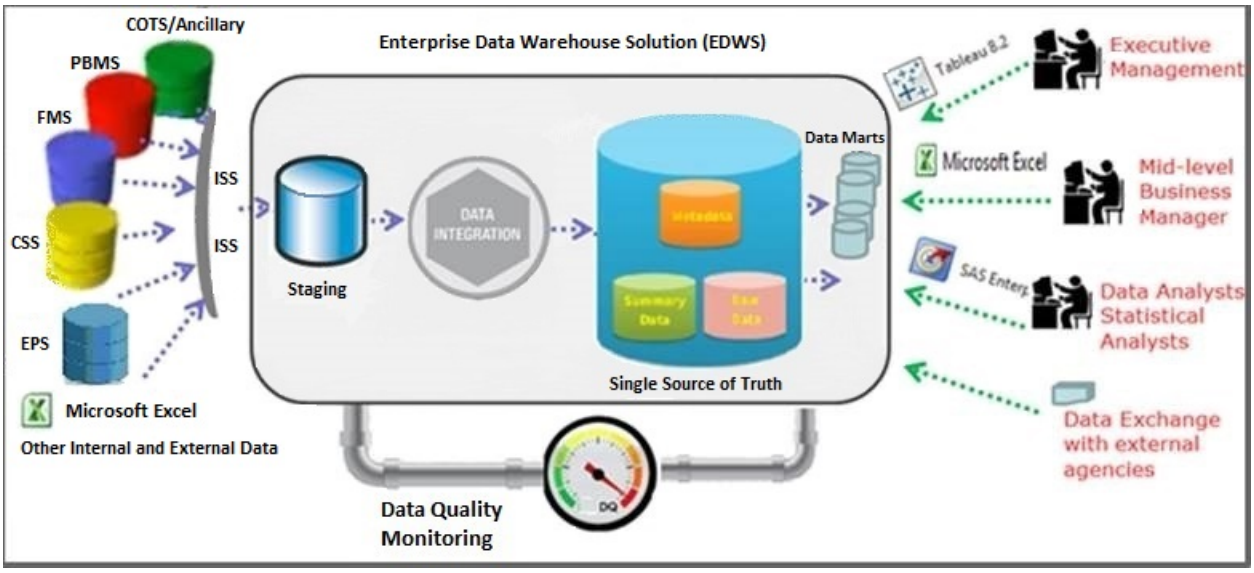
Reporting requirements are included in Appendix J.34 – Reporting.

3.b.5. FUNCTIONAL REQUIREMENTS

3.b.5.1. EDWS ARCHITECTURAL FRAMEWORK

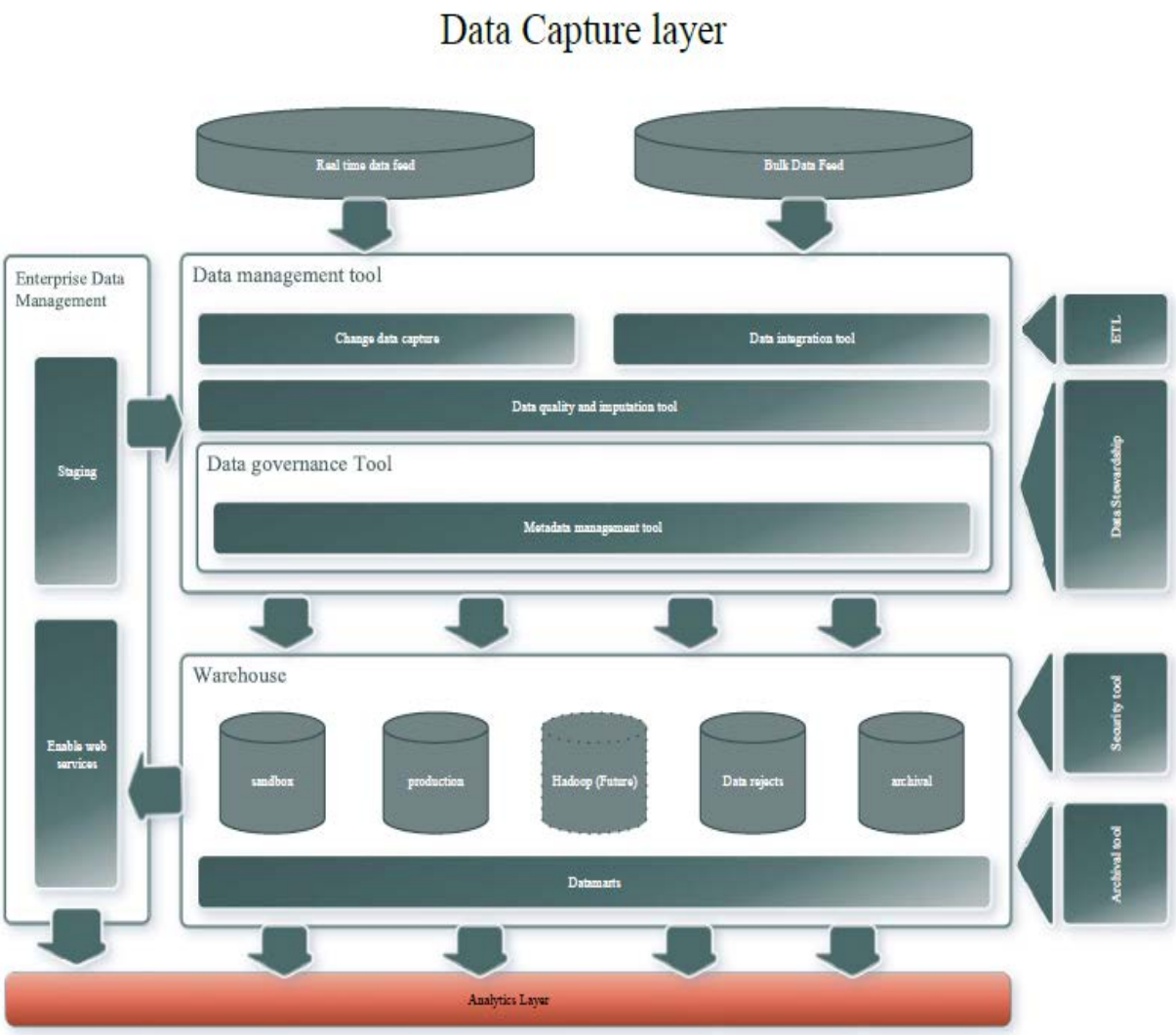
DMAS, as a part of the MES, will establish a centralized EDWS and business intelligence platform where disparate data sources will be integrated, transformed, cleansed and stored in a centralized repository. This single source of truth will enable timely and consistent reporting for all user levels across the agency. Moreover, the data warehouse will support continuity of care study that may include descriptive, prescriptive, predictive, interactive and simulative study of claims, clinical data and related social data. Contractor will adhere to the frequency of data exchange as desired by DMAS. DMAS expects the Contractor to assure data quality pertaining to the benchmarks set forth by DMAS. Lastly, any and all products generated by the Contractor during the course of and pertaining to MES will be shared with DMAS.

Figure 11: EDWS Architectural Framework



The architectural framework covered in this section describes the general system layers and components of the EDWS reference architecture that the Contractor shall address in its proposal. The design of each layer of the reference architecture is based on industry best practice design patterns and aligns with the requirements of MITA. Key technical capabilities that will be considered are included in the reference architecture and its layers. The reference architecture and design offers a means to appropriately address scalability, capacity, extensibility, adaptability, performance, availability, stability and security.

Figure 12: Data Capture Layer



A) DATA CAPTURE LAYER

Data integration is a critical component of building an enterprise analytics environment. In the current environment, DMAS attempts to leverage dozens of data feeds from a wide range of sources including in-house systems, external routine data streams and data "dumps" acquired either on a periodic basis or for a short term initiatives.

A data capture platform with data integration tools, data quality monitoring tools and change management contributes to consistent reporting, and enables reliability in measuring outcomes for the Department. The data capture layer will allow DMAS to have a structured, consistent and timely method by which to capture data in real time or in batch feeds. Data management tools will allow for accurate tracking of changes in how we collect data, consistency in data integration and in applying data quality standards. ETL (extract, transform, and load) or DI (data integration) will provide DMAS an efficient and consistent method for manipulating data received into the data capture environment based on data

governance rules. DMAS has established a data governance committee and developed a data governance charter which serves as the foundation for implementing data governance and standardization. The premise for governance policies and data governance rules will be the integration and maximization of the knowledge of the DMAS workforce including management, data experts, IT specialists and executive leadership through the data governance program. Metadata management tools will be the method by which data governance is put into action through the technology of a data capture layer. Finally, the tools, procedures, data security and data archival will form the backbone upon which data-marts will be built for user driven, interactive and customized reporting for individuals accessing DMAS reports through the analytics layer.

B) ANALYTICS LAYER

An effectively structured data capture layer is essential for a robust, accurate and reliable analytics layer. Version control and automation are the basis for all reporting and user access controls in the analytics environment. Well managed and integrated data can then be dynamically visualized for leadership, management and other users complete with a wide range of customization and "slicing and dicing" features for drilling down on specified populations. Executive management and leadership will have access to near real-time dashboards and management review decks which will quickly and accurately represent the overall wellness of the organization and its programs. The Solution will be capable of portal based access allowing for trusted, secure access by the right individuals at the right time. The essential EDWS components that the Contractor will address in its proposal are summarized below.

3.b.5.2. HARDWARE REQUIREMENTS

A) APPLIANCE FOR EDWS

As a part of the EDWS, DMAS requires an appliance for data warehousing and analytics that can support traditional structured data. The initial capacity requirement is 100TB and the platform will be scalable to support growing data needs to 300TB in the next ten years.

The Contractor shall provide two options relative to the hosting location of the EDWS appliance hardware.

- The Contractor is required to offer and price the appliance hosted by VITA in the Chesterfield, VA offices, and the Contractor is required to comply with VITA standards and meet VITA approved SLAs.
- The Contractor shall provide a second option where the location for the appliance is to be determined by the Contractor and priced accordingly as an options response. The Contractor will need to demonstrate that costs associated with the appliance hosting, outside of VITA and DMAS, will be cost effective relative to the VITA hosting solution yet meet all of the security and operational requirements.

Please refer Section 3.b.7, Service Requirements, for additional information regarding the two options.

The Contractor shall address and meet the detailed requirements related to Hardware described in Appendix J.19 – Hardware.

B) TABLEAU SERVER

DMAS currently utilizes Tableau Desktop for data visualization for select business areas and in the future, would like to empower all employees to make informed decisions. This reliance on data requires a high degree of availability to the underlying systems with different levels of security for different audiences.

Figure 13: Tableau Server Architecture – Data Flow

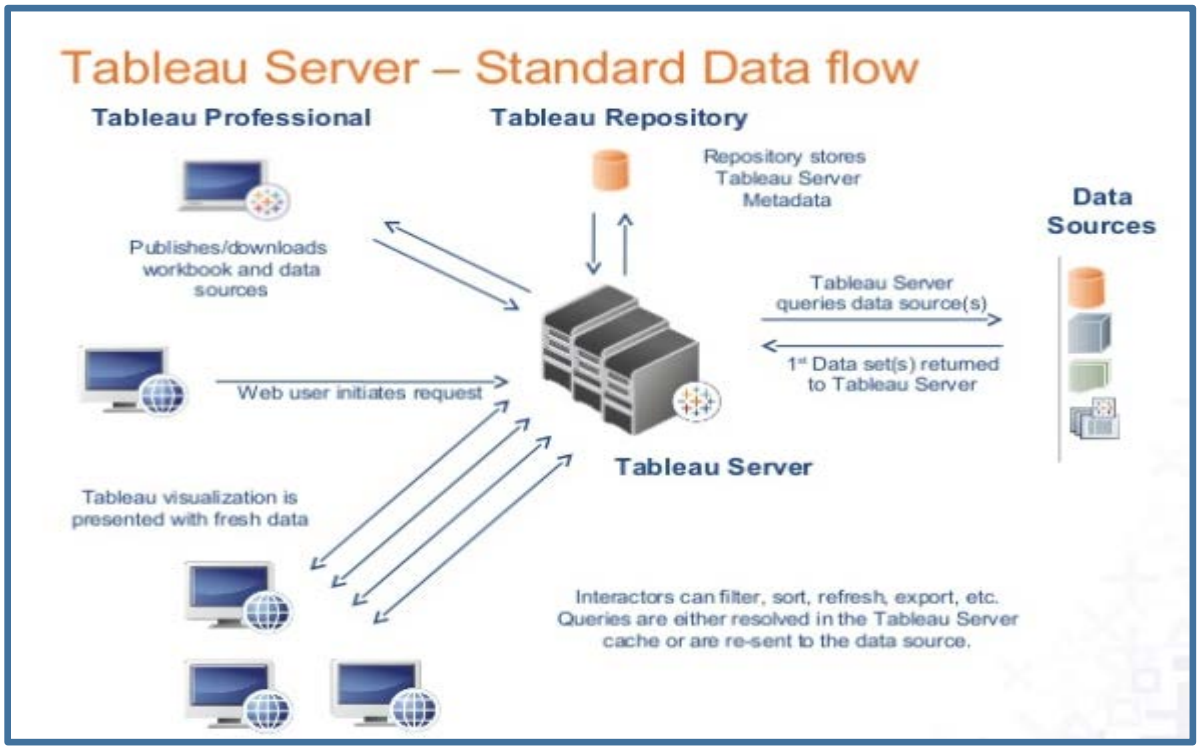
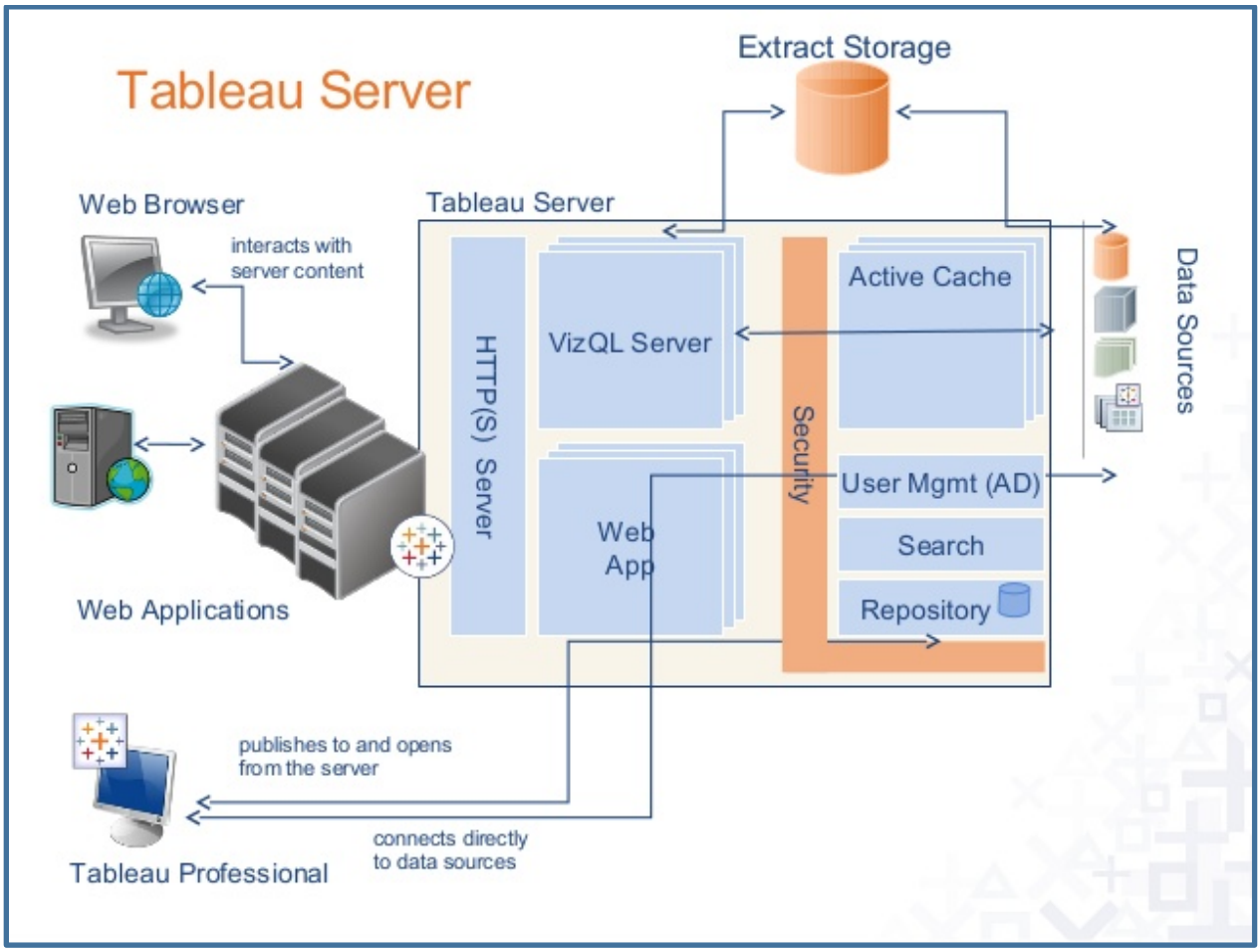


Tableau Server is comprised of several processes operating together. These may run concurrently, but typically all processes won't be running all of the time. These include:

- **Application Server:** The application server handles requests to the web application such as searching, browsing, logging in, generating static images and managing subscriptions
- **VizQL Server:** The VizQL server handles the task of loading and rendering requested views.
- **Data Engine:** The data engine receives queries made to Tableau Data Extracts present on the server. These queries come from the VizQL processes. To service these queries, the Data Engine loads the Tableau Data Extracts into memory and returns the requested record set
- **Backgrounder:** The backgrounder runs maintenance tasks and data extract refreshes. The data server handles requests to Tableau Data Sources. These requests can come from the Tableau Server or from Tableau Desktop users.
- **Repository:** The repository is the database Tableau Server uses to store settings, metadata, usage statistics and workbooks.

Figure 14: Tableau Server Architecture – Extract Storage



The Contractor will address and adhere to the requirements related to the Tableau Server as described in Appendix J.20 – Tableau Server.

3.b.5.3. SOFTWARE REQUIREMENTS

- **Data modeling tool**: A Data Modeling tool is essential to create and maintain conceptual, logical, and physical data models for the EDWS and its participating source systems in a clear and consistent form.
- **Data integration:** (including Extract, Load, and Transform (ETL) / Extract, Load, and Transform (ELT)) toolsets: ETL/ELT processes extract data from various source systems, enforce data quality and consistency standards, conform data so that the separate sources can be used together, and finally deliver the data in a format that can be used for reporting and analysis. This toolset will be selected primarily for its rich transformation functionality and performance. The tool should have parallel processing capability and enhanced tuning features to optimize processing of large datasets. Transformation mapping and business rules are an important type of metadata which is needed to support any ETL/ELT toolset for mapping data from source to target in the EDWS.

The toolset must support job scheduling, management and also provide visibility into expected timeframes to complete extract, transform, and load processes. The toolset must provide detail logging and reporting capability including start and end times for all extract, transform and load jobs/processes that have been planned and scheduled in specified timeframes.

The Contractor will address and adhere to the following additional requirements relating to the Data Modeling as described in Appendix J.21 – Data Modeling. The Contractor will address and adhere to the requirements related to the Data Integration as described in J.22 – Data Integration.

JOB SCHEDULING / JOB CONTROL

Job scheduling, job control and workflow management software is required to support all end to end EDWS job process components including data acquisition, data quality checks, data transformations and data publishing. These tools should permit capture of operational metadata and have restart/recovery processing capability for any job process components which may be interrupted by software or hardware failure. The Contractor will address and adhere to the requirements related to the Job Scheduling as described in J.31 – Job Scheduling.

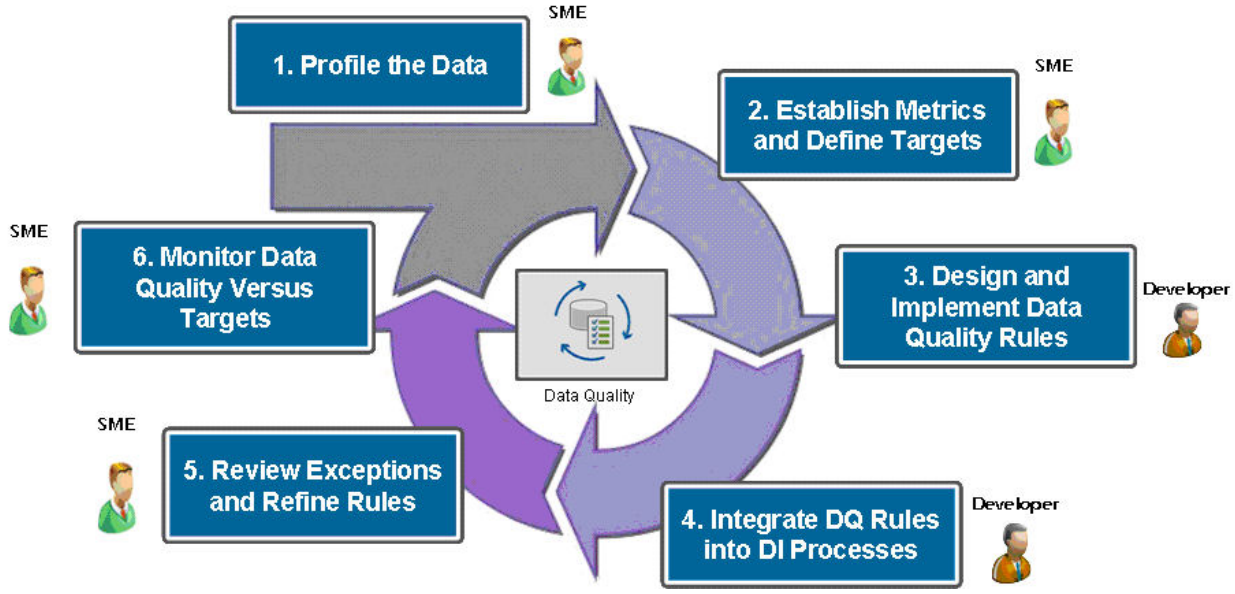
DATA QUALITY AND DATA PROFILING TOOLS

Data profiling is an analysis of the candidate data sources for a data warehouse to clarify the structure, content, relationships and derivation rules of the data. Profiling helps to understand data anomalies and assess data quality, data volume, data complexity, and frequency of data value usage. Data quality tools provide vital functionality to cleanse all data entering the EDWS before it is transformed into BI. These tools may exist as an independent product or may be part of an integrated ETL product suite and need to be well integrated/compatible with other EDWS software tools such as ETL, etc. Data Quality tools require access to technical metadata for attributes as well dependencies between entities to perform extensive quality checks. Data quality problems and issues need to be recorded with context in a quality metadata repository for later correction and reconciliation within the source systems. Data quality metadata will include the source system, date, type of defect and source context for each quality error or exception. This enables quality analysis to identify frequency of defect types and also when identified defects have been corrected in the source system.

Administrative staff will have the ability to access and use operational metadata to determine the performance and behavior of end-to-end system processes.

The data quality tool will support the following Data quality monitoring process.

Figure 15: Data Quality Monitoring Process



The data quality tool shall enable data profiling, cleansing and reconciliation across multiple sources, and subsequent monitoring of new data creation and provide insights to the following quality aspects.

The Contractor shall address and adhere to the requirements related to Data Quality as described in Appendix J.23 – Data Quality.

Data Publishing Tools

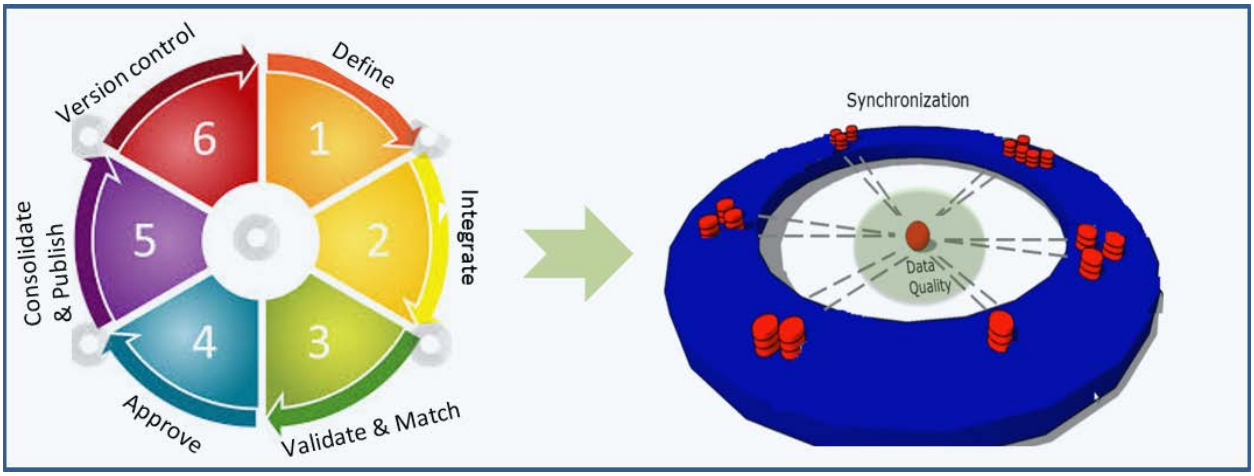
Data publishing tools provide a clean and consistent interface mechanism for both users and external systems to access business intelligence data and other EDWS information products. Data is transformed into a form suitable for publishing by the ETL toolset. Once data is ready to publish it is important to have a fast and efficient tool or methods to copy the latest EDWS data into the BI publish area. This publish process refreshes the BI area with new and current data while minimizing the time the publish area is offline and unavailable to end users and system subscribers. Tools to support high speed large data refreshes may involve specialized database, operating system or storage subsystem processes and synchronizing techniques.

Master Data Management (MDM) and Identity Resolution Toolsets

MDM toolsets integrate and de-duplicate multiple sources of data to create unique individual identity and any subject matter (including member and provider data) that needs synchronization could be a candidate. The EDWS provides one focal point, one place that the agency can identify as the correct definition of member or provider or whatever the subject matter might be. The MDM will help in producing the plumbing to synchronize the data between the Data Warehouse and various underlying systems which connect to it.

The MDM solution will need a way of addressing the quality of the data and ensure that the data getting synchronized is indeed correct. The business needs to set up processes for addressing the discrepancies between the systems.

Figure 16: MDM Solution Example



A complete and flexible MDM solution will provide these basic functions:

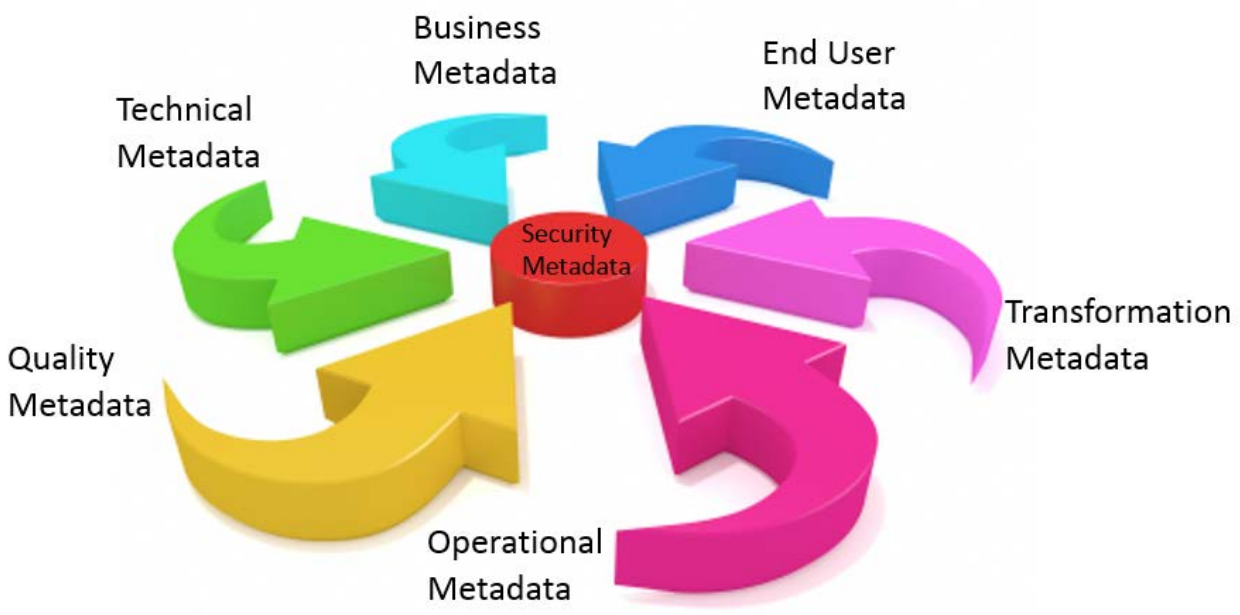
The Contractor will address and meet the following detailed requirements relating to MDM Solution as described in Appendix J.24 – Master Data Management.

METADATA MANAGEMENT TOOLSET

A metadata management toolset provides the capability to identify, capture, retain, analyze and publish information that provides detailed knowledge about the characteristics and behavior about both business and technical processes and their associated data. Metadata management requires the creation and maintenance of repositories to maintain metadata information.

The metadata repository contains information about all EDWS processes. Each EDWS process is monitored to gather metadata. Statistics for all normal events, exception events, and performance related information is maintained in the metadata repository. The EDWS solution metadata provides ongoing information on the behavior of the EDWS solution over time. It tracks detailed data exception information that may be used as a "context" reference for data related quality issues by participating data stewards. Also, from a system perspective the EDWS metadata is valuable to pinpoint, understand and tune performance bottlenecks in daily EDWS processing.

Figure 17: Metadata Management Example



The design and use of a comprehensive metadata repository is required. At a minimum, the following are the Metadata repository categories that the Contractor shall address in its proposal for the EDWS.

Business Metadata Repository: Business metadata provides the context and "standard" definitions of business terms related to enterprise data. Business metadata is mainly addressed to and used by the data warehouse users, report authors (for ad-hoc querying), cubes creators, data managers, testers, or analysts. Examples of Business Metadata may include the following:

- Semantic business description and context for all data elements
- Enterprise Data Model (or Common Information Model) and Conceptual Model with relationship between systems and entities
- Business Rules on the relationships and usage of data

Technical Metadata Repository: Technical metadata is most often used by the technical analysts for development and maintenance of the data warehouse. Also, allowed values and dependences between data elements define rules which allow Data Quality to be evaluated. Examples of fields to include in a Technical Metadata are:

- Source systems
- Entity and attribute names
- Allowed values for attributes
- Default values for attributes
- Dependencies between attributes
- Dependencies between entities (foreign keys, constraints, etc.)

- Source and target transformation maps and logic
- ETL process names
- Workflows and security attributes (allowed and values)

ETL technical metadata (ETL process metadata, back room metadata, transformation metadata) is a representation of the ETL process. It stores data mapping and transformations from source systems to the data warehouse and is mostly used by data warehouse developers, specialists and ETL modelers.

Quality Metadata Repository: Data quality metadata advises users about the currency (freshness), accuracy, validity or completeness of the data in the warehouse (or on reports, queries or OLAP cubes). Quality metadata answers the business user's question: Does this data possess sufficient quality for me to use it for a specific purpose? Data quality information gives users the ability to assess the freshness, accuracy, completeness and validity of data. It allows users to ascertain whether or not they want to use certain data for a specific purpose, based on its overall quality.

Operational Metadata Repository: Operational data within the EDWS environment may be used to control, monitor and describe the behavior of EDWS processes. With the aid of operational metadata support, the administrative staff will generate and maintain logs with statistical tracking facilities and flexible auditing facilities. Historical operational metadata will be maintained for trend analysis. For example, in a complex environment with many source systems, quality checks, transformation tasks and publishing needs, there may be a reference set of control metadata that can be used to control the scheduling, sequencing and dependencies for EDWS process workflows.

Security Metadata Repository: As specific EDWS information security requirements are identified this information can be represented as Security Metadata. Security requirements related to data access at any level of detail can be defined for end user groups and individuals. Security metadata is essential to define and preserve consistent enforcement of data access in an environment of dynamic staff hiring, dismissal, movements, re-assignment and changes in responsibilities.

End User Metadata Repository: Metadata can assist in providing information about success factors for the EDWS initiative. End-user metadata can help to understand and influence user attitudes toward, and use of an EDWS.

A basic measure of EDWS success is the degree to which the EDWS is adopted and used by the target audience. Metadata encourages use of an EDWS by facilitating understanding and trust of available data thus making users more willing to use the EDWS for more creative analysis. Metadata about the behavior of EDWS processes and quality of EDWS data creates transparency and confidence in the EDWS environment and its resulting BI products.

Metadata security: All metadata in the system and databases will be made secure. Access will be granted based on authorized approval to tools and repositories of metadata to users that require the metadata for analysis. Metadata tools and repositories will provide authentication, roles based, access control, object and row level security methods. All access to metadata will be in compliance with established security policies and procedures. Data Encryption and Security – Encryption is the conversion of data into a form that cannot be easily understood by unauthorized people. For security reasons, DMAS requires that EDWS data be kept encrypted in storage and at rest.

Data Masking and Obfuscation: Replaces the original sensitive data with realistic-looking scrubbed data that has same type and characteristics as the original sensitive data thus enabling organizations to share this information in compliance with information security policies and government regulations.

Metadata Management requirements are included in the Appendix J.27 – Metadata Management Toolset.

SOFTWARE COMPONENTS FOR ADMINISTRATION AND OPERATIONAL SUPPORT FOR THE EDWS

Monitoring and Audit tools ability of the system and its supporting environment and tools to routinely examine the detailed behavior of important infrastructure components and application processes. Data monitoring tools provide vital information to support staff about the health and behavior of all aspects of the EDWS hardware and software infrastructure. It is important to monitor key parameters within the operating system, network, database and EDWS application areas to establish a baseline for normal operation. Using comprehensive monitoring tools can provide both a baseline for normal behavior and a trend of behavior over time. Alarms can be raised if important thresholds are exceeded to allow appropriate response before serious problems are created.

Change Management tools: Tools to ensure that standardized methods and procedures are used for efficient and prompt handling of all changes to control IT infrastructure, in order to minimize the number and impact of any related incidents upon service. The EDWS development and support team will respond appropriately to each impact with necessary EDWS changes as required. Ideally, change management events for all participating systems and subsystems should be tracked on an integrated timeline with other environment monitoring information. This would support an efficient cause and effect analysis for the EDWS environment as problems arise and changes occur.

Source Code tools: Tools to track and version all code, control data and documentation for the EDWS. EDWS Release packages should reference appropriate versions of all components and documents.

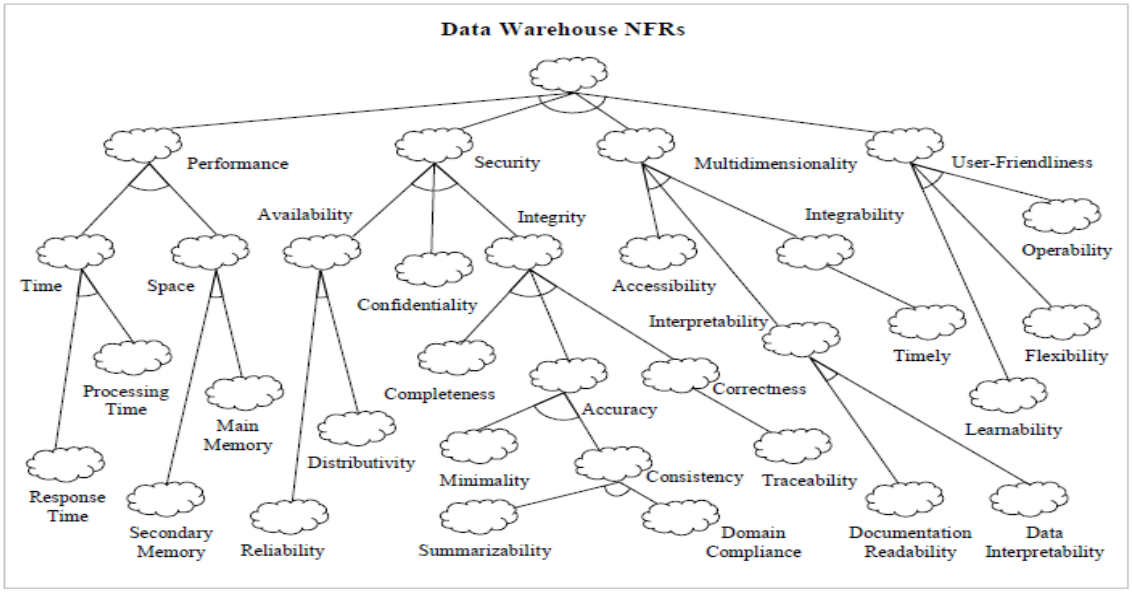
Quality Assurance and Testing tools: EDWS problems and issues should be identified and tracked by an Issue Tracking System. This may include new feature requests as well as identified problems and bugs.

Documentation tools: A standard set of documentation tools should be available for all EDWS development and support groups. This tool suite should include a standard tool for word processing, spreadsheet, diagram preparation, presentation and publishing requirements. Tools to manage the documents and attachments produced throughout the life of the project.

3.b.6. NON-FUNCTIONAL REQUIREMENTS

To build a EDWS for DMAS, the Contractor will develop complex process of extracting, transforming, and aggregating data while managing to deploy a Solution that precisely and timely integrates with a number of heterogeneous source-systems; presents analytical results in an accurate, reliable form; offers flexibility at the front-end where ad-hoc queries are to be launched; and supports a complete, non-redundant dimensional model. Thus, both operational and strategical visions have to be wrapped up into a multidimensional package to meet DMAS analytical requirements that pervade pure decision-support functionality as well as strong quality constraints like integrity, accessibility, performance, and domain-specific non-functional requirements such as multidimensionality. The non-functional requirements encompass all tasks and activities performed by the Contractor to judge the operation of a system.

Figure 18: EDWS Non-Functional Components



3.b.6.1. PERFORMANCE

The Contractor will include in its proposal the methodology to be used to offer best response and processing times and the methodology to monitor the performance of the proposed Solution. The Contractor shall plan for data access and delivery capacity for the EDWS to ensure that performance and response time objectives are maintained as per the SLAs identified.

Performance is about the resources used to service a request and how quickly an operation can be complete, e.g., response time, number of events processed per second, etc.

In its proposal, the Contractor will provide details about the approach to improve performance. For example: run independent jobs in parallel, make use of joining and indexing techniques, ensure parallelism of processors, efficiently populate the repository, etc.

RESPONSE TIME

The Contractor will build an EDWS, such that the central component (i.e., the database) is a high-performance product that will meet DMAS' current and future needs. The DMAS data warehouse will deal with aggregation of millions of records, and all essential aspects for low response time should be considered including backstage processing and analytical querying. Additionally, performance in terms of average and worst-case response times, and average and peak concurrent users should be addressed by the Contractor. The proposed performance specifications will, at a minimum, address response times for all actions for all access tools and the number of simultaneous users, by activity that can potentially access the system.

VELOCITY

Data warehouse velocity measures how quickly data becomes available throughout the data warehouse environment. Data warehouse velocity refers to the speed at which data moves through the business intelligence/data warehouse environment from the initial entry into the operational environment,

through ETL (extract, transform and load) and into the data warehouse, and finally to the data mart environment. Contractor will include performance specifications for all systems access, data access, or data navigation tools.

AVAILABILITY

Availability is the extent to which the data warehouse system is promptly available to all stakeholders. The EDWS will be a single source of truth and will be a central repository for all relevant DMAS data. It is crucial that the EDWS has high availability and reduced downtime even during refresh.

The Contractor will provide details about the maintenance requirements and down time specifications for their proposed solution for daily refresh and system modification. Also, the Contractor will define peak or off peak hours during which loading can happen.

The percentage of time the EDWS is available for use considering aspects of maturity, fault tolerance, and recoverability will be included in the SLA.

RELIABILITY

Reliability is the confidence that the system (and processes) work correctly with the given set of inputs. Reliability is assessed by how quickly a process can be brought in to deliver the expected output if the process fails or aborts due to any reason. A reliable data warehouse needs to depend upon restore and recovery a lot less.

Contractor will include the strategy for error handling and restarting versus aborting a process. Contractor will describe the process to handle potential failure cases and explain the extent to which precautions need to be taken in the system and what needs to be addressed outside the system.

The SLA will include the permissible conditions for the system/process to not be completely accurate, and the frequency/probability of such recurrence. Also, the tolerance level of erroneous data that is permitted and the threshold will be determined in the SLA.

3.b.6.2. SECURITY

The EDWS serves as both the provider and the guardian of Medicaid enterprise data. The Contractor will specify in its proposal how they plan to address the following security requirements for the EDWS as it relates to:

EDWS Security Approach: EDWS data security will embrace the security policies of the enterprise, participating agencies, individual Medicaid programs, specific supporting operational systems, as well as State and Federal security mandates and best practices. The EDWS security approach is designed to provide an example roadmap to implement EDWS security requirements necessary to satisfy all related policies and business requirements. The security approach will also take into account provisioning and implementation of secure access across all layers of the EDWS for all data in transit and at rest.

EDWS Security Plan: At the start of the DDI phase, the selected Contractor will submit an EDWS Security Plan that will conform to the requirements of DMAS Security Plan Template required for any development project for the agency. The Contractor also shall identify the conditions in its proposal that will trigger the update or maintenance of the EDWS Security Plan subject to approval by DMAS.

EDWS Security Components

The EDWS Security Plan will address (at a minimum) the following security components applicable for an EDWS:

- **Data in Transit:** Data in Transit will be protected to maintain its confidentiality and integrity, including the integrity of the sender, receiver, and all the parties involved in the exchange of data. It is critical to ensure that any data in transit is protected from beginning point to end point. The secure transmission of data that is in transit relies on both encryption and authentication. An easy to deploy solution will be required for protecting all communications to, from, and within the EDWS environment. The EDWS environment will be able to be configured to reject connections from clients that do not encrypt data on the network or to optionally allow unencrypted connections from approved trusted sources. In addition, the EDWS environment will support SFTP for file transfers and exchanges. Additional mechanisms like Secure HTTP, Secure Email, and Secure Shell will be used where required and mandated by EDWS security policies.
- **Data at Rest** (all data on computer storage)**:** Data on all storage devices, including but not limited to hard drives, tapes, flash drives, memory, and mobile devices will be secure. Solutions and/or tools to encrypt the data as required will be available in the EDWS environment. Encryption key management shall be provided as part of the solution. In addition, this data will be physically secured to allow only authorized access. All data at rest will be password protected.
- **Database storage and access:** All data stored and retrieved from the EDWS database repositories will be secured using multiple security layers. The EDWS will provide a highly granular access control model and authentication in support for roles and row level data security. Database security will ensure that only authenticated users perform authorized activities at authorized times. The security will encompass privileged user control and real time access controls. All user accounts will be password protected with the capability to change passwords on a periodic basis. All database activity will be able to be tracked and audited per the established security procedures. In addition, the database will have capability to encrypt data in the database. Database security will be implemented for all applications and programs that access data in databases.
- **Applications Security:** Most EDWS users may not access a database by directly logging into the database system. Instead, they will access the database via a BI tool and/or a web browser or other applications or scripts that connect to the database. Application level security will be provided for these users. Application roles, authentication, and other forms of application security in compliance with the security policies will be implemented in the Solution.
- **Data Publish and User access:** Data that is published and accessed from the EDWS will be compliant with the security policies for EDWS. Users will be provided network, system, application, and data access based on authorization and approval for access. The EDWS will implement robust multiple security layers for access. In addition to system- and application-level access, there may be database-level access required for some authorized users. The objects and the data in the database will also have fine granular security for granting access to approved users. In addition, all data extracts produced by the EDWS will be secure and comply with the established security policies.

- **Metadata security:** All metadata in the system and databases will be made secure. Access will be granted based on authorized approval to tools and repositories of metadata to users that require the metadata for analysis. Metadata tools and repositories will provide authentication, roles-based, access control, object, and row-level security methods. All access to metadata will be in compliance with established security policies and procedures.
- **Development and Testing Environment Data Sets:** Access to the development and test environments will also be secured with access being provided to a subset of authorized users, based on data source and/or data collection, in support of development and/or testing activities by release, in each environment. In addition, sensitive data sets, including but not limited to, Personally Identifiable Information (PII), will be masked and obfuscated to protect the sensitive nature of this type of data in these environments. It is required that the tools and procedures used to create and maintain this data provide reliable industry-grade masking and obfuscation capabilities in these environments to protect against data security breach. The tools and procedures will be compliant with the security plan and practices adopted by the EDWS.
- **Onsite and Offsite Data Backups, Storage and Access:** All onsite and offsite data that is backed up and stored will be secure and will follow the established EDWS security policy guidelines. Access to this data both physically and remotely will be allowed only by authorized individuals.
- **Network Security:** Network security involves the authorization of access to data in a network. Network firewalls and network-based intrusion detection systems will exist for the EDWS environment. This layer of security will generally serve as the first line of defense when access to the EDWS environment is sought. This layer of security will prevent and monitor unauthorized access, misuse, modification, or denial of the computer network and network-accessible resources. This layer of security will also provide virus protection and remediation for the EDWS technical infrastructure across all environments. The EDWS environment will follow the DMAS and VITA established network security policies and procedures.
- **Auditing and Tracking:** Security audit trails will need to be generated and maintained so that network, system, application, and data access can be logged and tracked. The security audit process will be included in the EDWS Security Plan and will be approved by DMAS. Audit approach will ensure security policies and guidelines are being followed and any security warnings, gaps, or breaches are reported and addressed in a timely manner.
- **Risk Management:** Risk Management refers to the process of identifying risk, assessing risk, and taking steps to reduce risk to an acceptable level. Risk management is critical for EDWS to successfully implement and maintain a secure environment. Risk management is performed as vital component during planning process for the EDWS environment and infrastructure. Risk assessments will identify, quantify, and prioritize risks against enterprise criteria for risk acceptance and objectives. The results will guide and determine appropriate enterprise action and priorities for managing information security risks and for implementing controls needed to protect EDWS information assets.
  - ✓ An initial risk assessment is required to ensure there is complete transparency of project status across all stakeholders. This mainly includes the following:
  - ✓ Risk classification
  - ✓ Risk identification

- ✓ Initial risk assessment*
- ✓ Risk mitigation and residual risk assessment**
- ✓ Risk monitoring

*Initial Level of Risk: Risk categorization prior to determining and implementing mitigating actions.

**Residual Level of Risk: Risk categorization after implementation of mitigating actions (if any).

Security Policy: The objective of the EDWS Security Plan is to provide management direction and support for information security in accordance with EDWS business requirements and governing laws and regulations. The EDWS Security Plan will be approved by DMAS management, and published and communicated to all employees and relevant external parties. These policies will set out the EDWS approach to:

- **Organization of Information Security:** Information security will be managed within the DMAS Office of Compliance and Security (OCS) division. DMAS management will approve information security policies, assign security roles, and coordinate and review the implementation of security across the enterprise. Information security will be coordinated across different parts of the enterprise with relevant roles and job functions. Information security responsibilities will be clearly defined and communicated. Security of EDWS information assets and information technology that are accessed, processed, communicated to, or managed by external parties will be maintained.
- **Asset Management:** The objective of asset management is to achieve and maintain appropriate protection of EDWS assets. All EDWS data and metadata assets will be identified according to established enterprise policies and procedures where available. The EDWS will leverage existing asset definition and also define new asset classifications unique to the EDWS. Asset definition will include information classification and sensitivity along with processes to determine appropriate levels of protection. Owners of information assets will be identified and will have responsibility for identifying the classification of those assets and maintenance of appropriate controls. To ensure information receives an appropriate level of protection, information will be classified to indicate the sensitivity and expected degree of protection for handling. Rules for acceptable use of information and information assets will be identified, documented, and implemented.
- **Human Resource Security:** All employees and, where relevant, volunteers, contractors, and third-party users will receive appropriate security training and regular updates on policies and procedures as relevant for their job function. All candidates for employment, volunteer work, contractors, and third-party users will be adequately screened, especially for roles that require access to sensitive information. Management is responsible to ensure security is applied through an individual's employment with EDWS. Procedures will be implemented to ensure employees, volunteers, contractors or third-party's exit from EDWS is managed and the return of all equipment and the removal of both physical and system access rights are completed.
- **Physical and Environmental Security:** The objective of physical and environment security is to prevent unauthorized physical access, damage, theft, compromise, and interference to EDWS information and facilities. Locations housing critical or sensitive information or information assets will be secured with appropriate security barriers and entry controls. They will be

physically protected from unauthorized access, damage, and interference. Secure areas will be protected by appropriate security entry controls to ensure that only authorized personnel are allowed access. Security will be applied to off-site equipment. All equipment containing storage media will be checked to ensure that any sensitive data and licensed software has been removed or securely overwritten prior to disposal in compliance with statewide policies.

- **Communication and Operations Management:** Responsibilities and procedures for the management and operation of all information processing facilities will be established. As a matter of policy, segregation of duties will be implemented, where appropriate, to reduce the risk of negligent or deliberate system and/or information misuse. Precautions will be used to prevent and detect the introduction of malicious code and unauthorized mobile code to protect the integrity of software and information. To prevent unauthorized disclosure, modification, removal or destruction of information assets, and interruption to business activities, media will be controlled and physically protected. Procedures for handling and storing information will be established and communicated to protect information from unauthorized disclosure or misuse. Exchange of sensitive information and software with other agencies and organizations will be based on a formal exchange policy. Media containing information will be protected against unauthorized access, misuse, or corruption during transportation beyond EDWS physical boundaries. To detect unauthorized access to enterprise information and information systems, systems will be monitored and information security events will be recorded. EDWS will rely on VITA's (or VITA approved) monitoring tools and techniques to gather information to ensure compliance with applicable statewide policies related to acceptable use.
- **Access Control:** Access to information, information systems, information processing facilities, and business processes will be controlled on the basis of business and security requirements. Formal procedures will be developed and implemented to control access rights to information, information systems, and services to prevent unauthorized access. Other access control measures will follow established enterprise password policies, policies/procedures regarding access to systems (e.g., who controls it, the right to revoke access, etc.), best practice/policies for locking systems when not in use, use of automatic time-out feature on screen savers, clear desk/clear screen policies, and remote telecommuting work policies.
- **Information Systems Acquisition, Development and Maintenance:** Policies and procedures will be employed to ensure the security of information systems. Encryption will be used, where appropriate, to protect sensitive information at rest and in transit. Access to system files and program source code will be controlled and support activities conducted in a secure manner. Technical vulnerability management will be implemented with measurements taken to confirm effectiveness.
- **Information Security Incident Management:** Information security incidents will be communicated according to VITA/DMAS Security Policy. Formal incident reporting and escalation procedures will be established and communicated to all users. Responsibilities and procedures will be established to handle information security incidents once they have been reported. The EDWS operating environment, with help of VITA's monitoring tools and techniques, will have the capability to monitor and detect security breaches and incidents with investigative analysis of monitor logs to take remedial action and evaluate lessons learned. Escalation or notification of EDWS security incidents to statewide incident management, response, and reporting will be supported. Virus threats, attacks, hacks, and all other forms of

unauthorized and unintended access to the EDWS infrastructure, including tools and applications, will be communicated to VITA, and the appropriate remediation policies and procedures will be followed.

Business Continuity Management: The objective of business continuity management is to counteract interruptions to business activities and to protect critical business processes from the effects of major failures of information systems or disasters, and to ensure their timely resumption. A business continuity management process will be established to minimize the impact on EDWS and recover from loss of information assets to an acceptable level through a combination of preventive and recovery controls. It will also address information security requirements needed for EDWS business continuity.

Compliance: The EDWS Security Plan to be developed will be in compliance with all State and Federal enterprise information security policies, standards, regulations, and security initiatives. Together, these documents serve to protect DMAS Information Resources (IR) in accordance with applicable State and Federal laws, rules, and regulations, including but not limited to those listed below:

- Information Security Policies Policy Title
- Federal Information Security Policies
- Federal Information Security Management Act (FISMA)
- National Institute of Standards and Technology (NIST): http://csrc.nist.gov/publications/PubsSPs.html
- Centers for Medicare and Medicaid Services (CMS) Policy for the Information Security Program
- Internal Revenue Service Publication 1075, Tax Information Security Guidelines
- Social Security Administration's Information System Security Guidelines
- Title 42: Public Health, Part 431 – State Organization and General Administration, Subpart F – Safeguarding Information on Applicants and Recipients (42 CFR Part 431.300)
- Title 45: Public Welfare, Subtitle A – Department of Health and Human Services, Subchapter C Administrative Data Standards and Related Requirements, Part 164 - Security and Privacy (45 CFR Part 164
- Federal Information Security Management Act (44 U.S.C. § 3541, et seq.)
- Computer security-related Federal Information Processing Standards (FIPS) published by NIST
- State Information Security Policies

3.b.6.3. DMAS Security Policy

It is the selected Contractor's responsibility to stay current on the above-listed security policies and to update the appropriate section of the EDWS Security Plan accordingly to comply with the policy changes. The selected Contractor will be required to execute and comply with DMAS general security requirements in J.9 – Security/Compliance Audit.

Security standards for desktop, remote laptop, and mobile access devices also will follow standard enterprise IT security policies. Appropriate data encryption will be activated for sensitive data especially data that is shared or transported externally.

3.b.6.4. MULTIDIMENSIONALITY

The Contractor will build a multidimensional architecture that entails accessing external and internal information under strict time and quality control constraints; integrating raw information to derive suitable strategic information; and conforming common dimensional requirements to get reusability.

The Contractor will design multidimensional data model that is stable, flexible to changing business practices, extensible to changing business needs, and can handle the diversity of Medicaid data without sacrificing ease of use or performance.

Data accessibility is at the core of multidimensional databases. The Contractor will aim at providing fast and up-to-date access to business information. The Contractor will integrate operational data on a timely basis and utilize business modeling techniques that contribute to increase data interpretability.

The Contractor will address and adhere to the following additional requirements relating to Multidimensionality as described in Appendix J.32 – Non-Functional Requirements.

3.b.6.5. BACKUP, RECOVERY, AND ARCHIVE

The backup, recovery, and archive functions include tasks performed by the Contractor to produce periodic backups of data and system components for archiving purposes and to provide the necessary data to restore the EDWS in the event of a failure. System backups record the current full state of the system or incremental changes made since a previous incremental backup was performed. These backups provide reliable points of recovery for software and data after failures occur. Backups are typically maintained for a period of time specified by the business and then recycled. Backups may be stored off-site for added security and recoverability. Archives are special business directed data and software maintained for indefinite periods of time as required by business needs.

The Contractor will address and adhere to the following additional requirements relating to Backup, Recovery, and Archive as described in Appendix J.35 – System Backup and Recovery.

3.b.6.6. DISASTER RECOVERY

The disaster recovery (DR) environment will be in a different physical location from the production environment. The Contractor will describe in their proposal how they plan to address the replication of production environment data to the DR site. The Contractor will address how they intend to support the business continuity/disaster recovery capability requirements for the EDWS. The selected Contractor will coordinate with VITA to meet the minimum geographic offsite location requirement of 100 miles between the disaster recovery site and the production environment site.

Disaster recovery includes the process, policies, and procedures related to preparing for recovery or continuation of technology infrastructure critical to an organization after a disaster. For purposes of the RFP, disaster means an occurrence of any kind whatsoever that adversely affects, in whole or in part, the error-free and continuous operation of the system, and/ or affects the performance, functionality, efficiency, accessibility, reliability, or security of the system. Disasters may include natural disasters, human error, crime, intentional torts, hackers, terrorism, computer virus, or malfunctioning hardware and/ or electrical supply. The contractor will always be prepared to take the steps necessary to fully recover the data and/ or system from the effects of a disaster and to achieve complete recovery from such disaster in accordance with SLAs. Complete recovery from a disaster is defined as being back in full operational production mode of operations with respect to all aspects of the system. The Department

will determine when unscheduled system downtime will be elevated to a system disaster status. The contractor will address and adhere to the following additional requirements relating to Disaster Recovery as described in Appendix J.25 – Disaster Recovery.

3.b.6.7. DATA RETENTION

Data will be maintained, retained, archived, and restored as directed by the data and document retention SLA.

Based on the record type, the retention rule and retention period will vary. At a very minimum, DMAS requires that 10 years of most recent claims data is readily available in EDWS for analysis and the previous 3 years (10 years and older) data to be archived. Data and documents will be available online and electronically to ensure that Contractor and Department staff continually have access to the information necessary to perform the operational tasks and activities.

Data Purging and Archiving Requirements are included in the Appendix J.1 – Technology Standards.

3.b.6.8. SCALABILITY

Scalability is about how resource consumption increases when more requests are to be serviced and how well the application can be scaled up to handle greater usage demands (e.g., number of input files, number of users, request rates, volume of data, etc.).

The expected growth in volume for DMAS data in the next five years is approximately 50 TB. The Contractor will validate if the batch cycle can meet SLAs in years ahead.

The Contractor will build the batch process to have flexibility to accommodate the same loads with minimal change. How many jobs can be executed in parallel could affect the degree to which the given application can scale. Details around distributed processing can also impact the expectations around scalability. If the data integration batch process is done centrally, it will have fewer complexities compared to when done in a distributed environment because synchronization between instances could potentially become critical.

In its proposal, the Contractor shall provide the details about how the solution can scale with growing needs of DMAS data.

3.b.6.9. MAINTAINABILITY

Maintainability is a measure of how easy it is to correct defects in the software or make any changes to any given piece of code. The degree to which software can be configured affects other nonfunctional aspects, like performance.

DMAS plans to embrace a staggered approach to implement ETL for new modular Medicaid Enterprise System as described in Section 3.b.1, Release Scoping. It is critical that aspects of the code be made configurable depending on the frequency and probability of change.

The Contractor will describe the general practices of release cycles and standard aspects of the batch that can be configurable. Also, Contractor will provide details of other aspects that need extra effort and are increasingly complex.

3.b.6.10. EXTENSIBILITY

Extensibility can be interpreted as the ease with which the given capability of the system can be extended. This will save DMAS time and money in future projects.

DMAS is anticipating a series of future system enhancements: refer to Section 3.b.1, Release Scoping, and additional changes to source formats are expected. It is important to assess if there is any need to define abstract transformations or reusable mappings.

The Contractor will provide details of how many different/divergent sources (different source formats) can be supported by the proposed solution and if the solution offers reusable mappings.

3.b.6.11. USABILITY

The degree to which the EDWS is easy to use will have a significant impact on the implementation time, user training, accessibility of data, and DMAS transition to use the new Solution.

The Contractor will provide details of how its Solution will address the following aspects of user friendliness.

- Operability: The ease of operation of the EDWS.
- Flexibility: The extent to which data warehouse software facilitates ad hoc querying.
- Learnability: The physical and or intellectual skill required to learn the system.

3.b.7. SERVICE REQUIREMENTS

3.b.7.1. IMPLEMENTATION SERVICE REQUIREMENTS

The Contractor will provide resources that have the required skills and competencies to implement the project throughout the SDLC. The Contractor shall be responsible for development and maintenance of the project plan based on the approach. The Contractor will be responsible for regular reporting of progress against the plan, recommending corrective actions to be taken in the event of unanticipated changes to the plan or schedule, and regular updates to the plan and schedule to accommodate any changes.

A) PRODUCT INSTALLATION

Professional services shall be provided by the Contractor to support the physical installation and hosting of the EDWS and its components within the DMAS/ data center. This installation requires strict coordination and approval with the VITA and the adherence to their published rules and regulations. The Contractor is required to work with their current Contractor (Northrop Grumman) and one or more of the State's eleven (11) preferred contractors. The proposal must describe the service requirements for installation and maintenance for the Contractor's proposed solution.

B) ENVIRONMENT SETUP

The Development/Test environment shall be similar to the Production environment in terms of its design, though it is expected this will be a scaled down version of the Production infrastructure. This environment also shall have infrastructure resources for all required development applications and tools

required during the design and development phase of the EDWS. The Development/Test environment shall support at least the following environments:

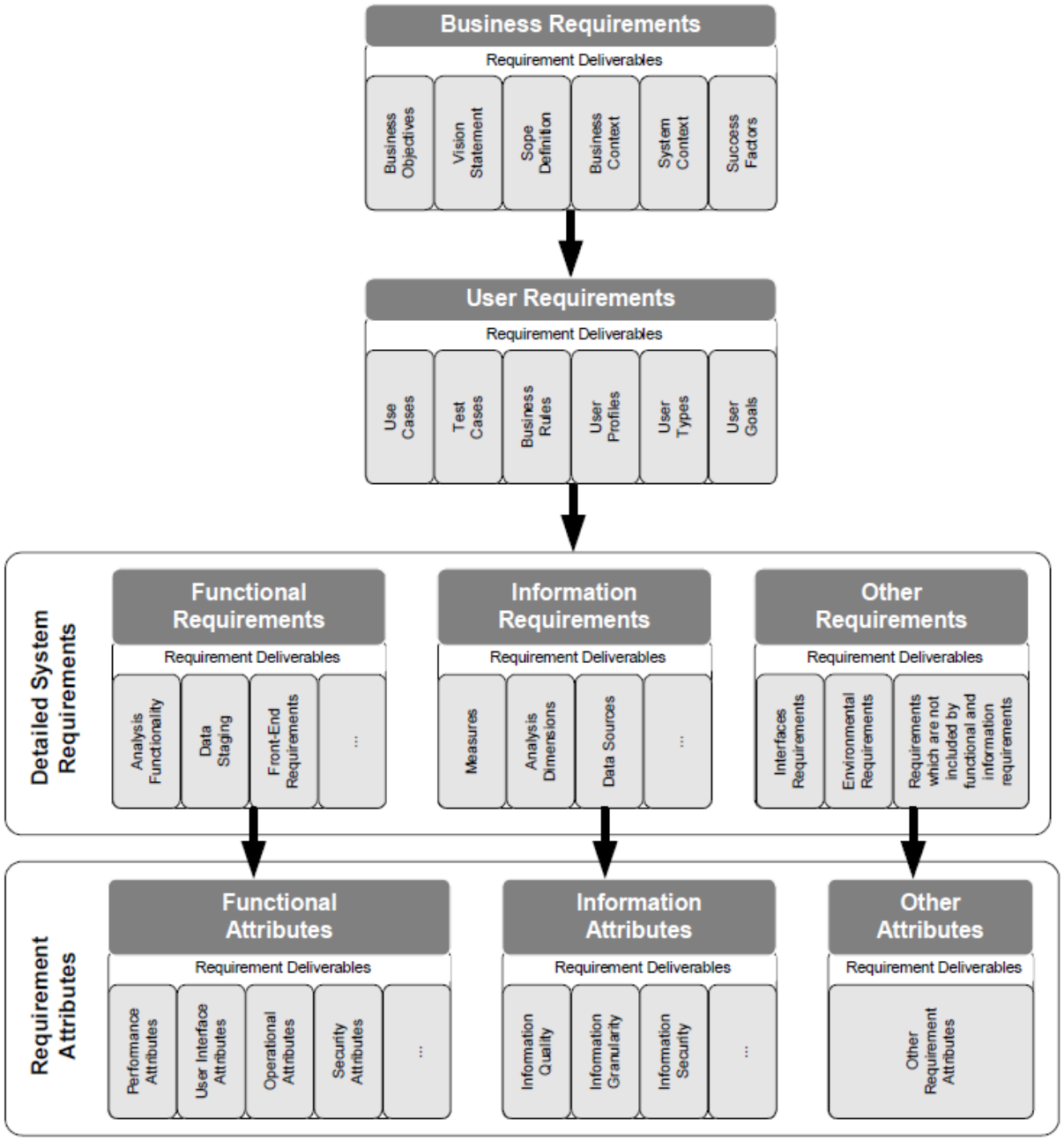
- **Development Environment**: Used to develop and unit test all software contained within the EDWS
- **System and Integration Test Environment**: Used to perform full-scale system integration testing for the EDWS
- **Quality Assurance Testing (QAT) Environment**: Containing Quality Assurance (QA) application and tools required during the testing phase of the project. This environment will support system, integration defect and performance testing for all work products prior to release to UAT and/or LAST environment
- **UAT Environment**: Shall be similar to production in terms of its design though it is expected that this will be a scaled down version of the production infrastructure. The environment shall support all required UAT activities including training, defect logging and other issues prior to sign-off and release of all work products to production. The Development/Test environment will be established within four (4) months of project kick-off.

C) REQUIREMENTS MANAGEMENT

The Contractor will work with stakeholders and users to understand the requirements for the data warehouse system and will ensure that the new data warehouse meets all business requirements, user requirements and system requirements. The Contractor will engage in all aspects of requirements engineering including requirements development, requirements management and requirements agreement. Contractor shall utilize a DMAS approved or supplied requirements documentation and management tool.

- **Requirements Development:** Requirements of an enterprise-wide data warehouse system determine its functional behavior and its available information, for example what data must be accessible, how it is transformed and organized, as well as how it is aggregated or calculated.
- **Business Requirements:** Requirements from business perspective represent high level objectives of the organization for the data warehouse system. They are primarily captured in a document describing the project's vision and scope. The business requirements identify the primary benefits that the data warehouse system will provide to the organization and its users.
- **User Requirements:** Requirements from user perspective describe the tasks that the users must be able to accomplish with the help of the data warehouse system. These requirements must be collected from people who will actually use and work with the data warehouse system. The user requirements must align with the context and objectives established by the business requirements.
- **Functional Requirements:** from an implementation perspective represent the data warehouse requirements on a very detailed level. Functional requirements define the functionality that the development team must build into the data warehouse system to enable users to accomplish their tasks, thereby satisfying the business requirements. Information requirements define the information needs of the organization. They describe the information and data, which the data warehouse should deliver or should have access to. Figure 19 shows a template for specifying functional and information requirements including their attributes.

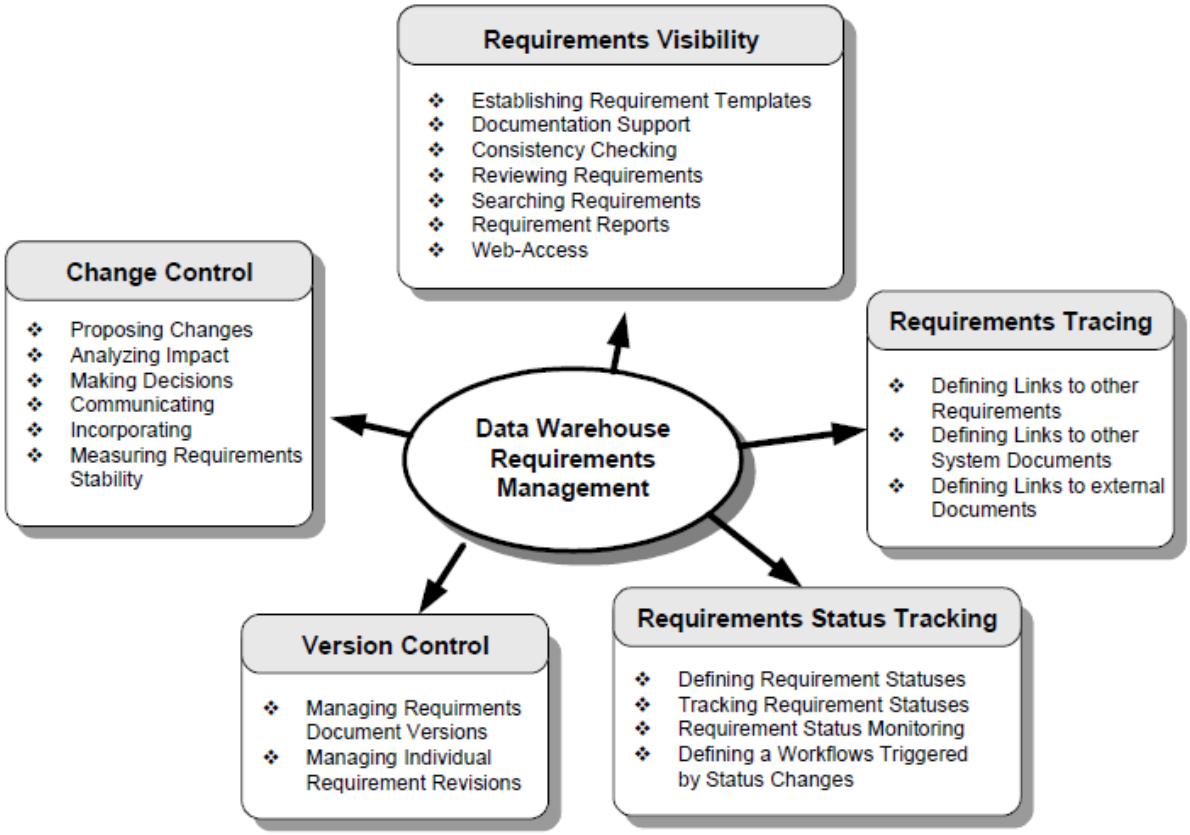
Figure 19: Requirements Management Components



- **Requirements Management:** includes all activities for establishing and maintaining the integrity and accuracy of the requirements agreements as the data warehouse project evolves. Requirements management includes the following activities:
  - ✓ Controlling changes to the requirements baseline

- ✓ Keeping project plans current with the requirements
- ✓ Controlling versions of individual requirements and requirement documents
- ✓ Managing the relationships between requirements, and links or dependencies between individual requirements and other deliverables
- ✓ Tracking the status of the requirements in the baseline
- ✓ Support for documenting the requirements
- ✓ Facilitating the requirements visibility by providing browsing, searching and reporting functionalities

Figure 20: Data Warehouse Requirements Components



D) DATA MODELING AND DATA WAREHOUSE DESIGN

The EDWS needs to be able to handle myriad different scenarios, from intense analysis on small amounts of data to reporting on vast amounts of data. Data modeling is one of the important building blocks in the enterprise system development. A flexible, consistent data model leads to a stable application, even in the face of changing data requirements.

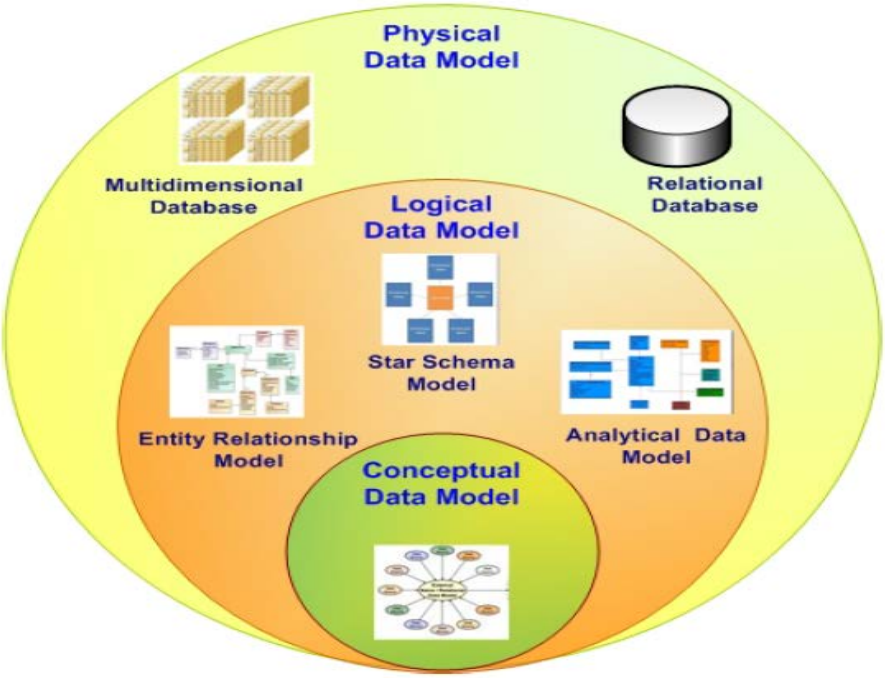
The Contractor is required to provide a comprehensive Healthcare/Medicaid data model design that has matured over a period of time and that can support all the business needs mentioned in Section 3.b.2,

Business Area Support. The selected response will embrace data modeling processes that ensure the correctness and completeness of a data model. The goal is to design a data model that is stable, flexible to changing business practices, and extensible to changing business needs.

The Contractor is required to design a data model that can handle the diversity of data DMAS owns today without sacrificing ease of use or performance. Contractors responding to this RFP shall include the minimum architecture diagrams for all layers within the EDWS which depict all system components, data sources, services and interfaces both inbound and outbound, data stores and repositories, data cubes and data marts.

The following types of data model layers, represented below in Figure 21, will be implemented by the selected Contractor.

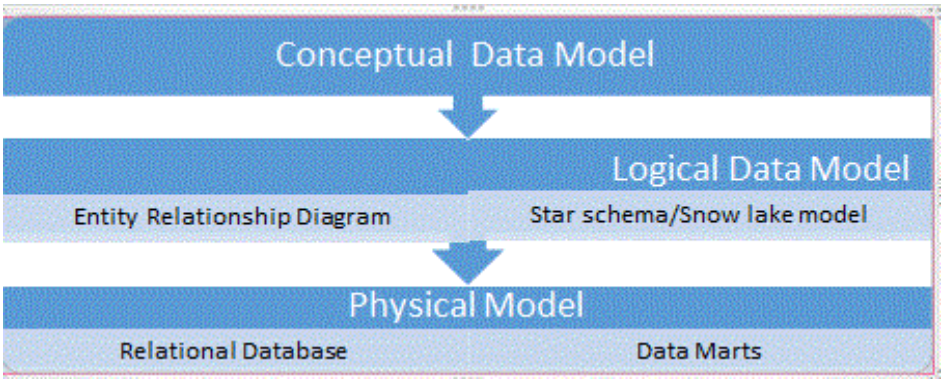
Figure 21: Conceptual Data Model Layers



- **Conceptual Data Model:** A conceptual data model identifies the highest-level relationships between the different entities
- **Logical Data Model:** The logical data model is a model that is not specific to a database that describes things about which an organization wants to collect data, and describes the relationships among these things. It is independent of the underlying physical database implementation. The logical data model will leverage the conceptual model to include all the entities, relationships, attributes and primary and foreign keys in the design.
- **Physical Data Model:** It is the actual model which will be created in the database to store the data and is the most detailed data model in Data Warehouse data modeling. The physical data

model includes: table names; column names (including data type and size); primary keys, foreign keys of a table; and constraints. Physical Data Models for the EDWS will include models for the landing area, the staging area and the base data area. Physical data models include the physical data schema derived from the logical data model.

Figure 22: Data Model Flow Example



E) DATA STANDARDS

Data standards are necessary when two or more parties exchange information. Medicaid infrastructure and information system investments are made with the assurance that timely and reliable adoption of industry standards and productive use of those standards are part of the investments. Industry standards promote reuse, data exchange, and reduction of administrative burden on patients, providers, and applicants. CMS will communicate applicable standards to states. Standards are updated periodically to ensure conformance with changes in the industry. States will be required to update systems and practices to adhere to evolving industry standards in order to remain eligible for enhanced Federal Funding Participation (FFP) funding.

The lack of shared data standards is one of the most important issues facing Medicaid system and subsystem interoperability. This issue goes well beyond the Medicaid Enterprise to include the private sector and other government agencies. It adversely affects Medicaid systems in many ways by:

- Creating the need for translators
- Constraining automated processes
- Reducing the potential of business processes that use shared data
- Requiring data duplication that results in poor quality and wasted physical storage
- Increasing paperwork and data collection burdens
- Reducing the analytic potential of health data
- Reducing the analytic potential of program integrity data
- Reducing the capability for data sharing, which in turn limits the usefulness of data used internally or externally (e.g., with trading partners, other Commonwealth Medicaid Enterprises, other agencies, etc.)

The MITA initiative coordinates the identification and use of common data standards for the Medicaid Enterprise. It addresses the need for a general consensus on common data vocabularies, assurances of privacy, and other issues surrounding electronic transmission of information.

- **Structure data standards:** Specify how to format or structure data. Because messages and data stores (e.g., flat files and databases) use structure data standards, this enables two or more computer applications to exchange data. Traditional data standards have focused on the structural aspect of data standards (e.g., Electronic Data Interchange (EDI) and Accredited Standards Committee (ASC X12).
- **Vocabulary data standards:** Conversely, deal with the content of the data elements (i.e., the semantics of the data). Vocabulary data standards enable systems to understand the meaning of the data. An example of a vocabulary data standard is the International Classification of Diseases, Tenth Edition, Clinical Modification (ICD-10-CM).

The CMS Enterprise Architecture Group considers data standards using the following principles and guidelines:

- Identification of standards already in use by current Medicaid systems.
- Alignment of data standards with data model entities/attributes and messages.
- Development of new standards only when no alternatives exist.

MITA adopts harmonized data and standards where appropriate as developed or adopted for use by the following entities:

- American National Standards Institute (ANSI) ASC X12
- Office of National Coordinator for Health Information Technology (ONC):
  - ✓ State-Level Health Initiatives – Initiatives designed to ensure that the efforts of States and regional agencies achieve Health Information Exchange (HIE) align with the national agenda.
  - ✓ Nationwide Health Information Network (NwHIN) – A collection of standards, protocols, legal agreements, specifications, and services to enable secure Health Information Exchange (HIE).
  - ✓ Federal Health Architecture (FHA) – An e-government line business initiative responsible for the Federal Health Information Model (FHIM) that increases efficiency and effectiveness in all government operations. This includes the Veterans Health Information Model (VHIM) as the base.
  - ✓ Adoption – An initiative supporting two national health IT adoption surveys: one of physician offices, and one of hospitals.
  - ✓ Clinical Decision Support and the CDS Collaboratory – An initiative to provide clinicians, staff, patients, or other individuals with knowledge and person-specific information, intelligently filtered or presented at appropriate times, to enhance health and health care.
- Federal, State, Local, and Tribal inter-agencies
- International Classification of Diseases (e.g., ICD-10)
- Industry/health care agencies (e.g., CMS, Social Security Administration (SSA))

- Individual SMA

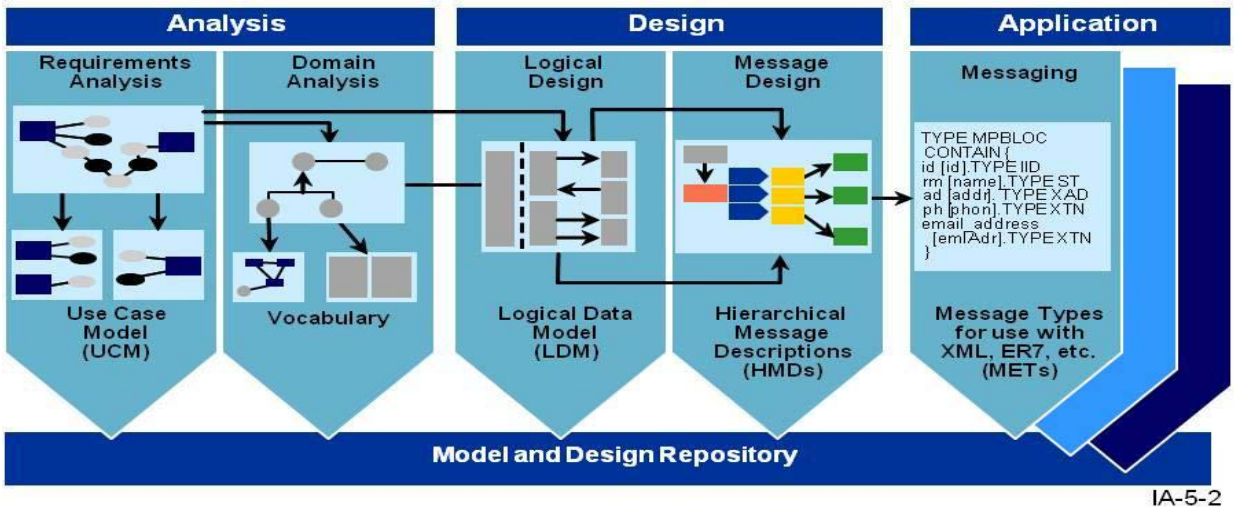
This section models the scenarios in which States exchange health care information. It illustrates the importance of data standards, how they fit together, why they are of concern for MITA, and how they contribute to the MITA distribution data-sharing infrastructure.

F) MODEL-BASED STANDARDS

To ensure interoperability of their artifacts, many information standards organizations derive their emerging health care standards from models (or they are reverse engineering their standards to models) such as the FHIM Reference Information Model (RIM) using Unified Modeling Language (UML). This enables the SMA to create CPPs where it can describe its conformance to a standard, any customizations, or constraints it has applied to the base standard, and the effects of such customizations and constraints on interoperation with other standard users. Profile owners can register their CPPs in registries so that potential intra- or inter-enterprise trading partners can discover them and negotiate the CPAs necessary to set up an information-exchange interface. The optimal interoperability among interfaces require architecting data harmonization to a core model that supports refinements for business-line specifications.

One of the key objectives for the modeling team is to utilize industry modeling standards to assist with the sharing of knowledge while taking advantage of transformation technologies. The Object Management Group (OMG) created UML and adopted Business Process Model and Notation (BPMN) as modeling standards in the information technology industry.

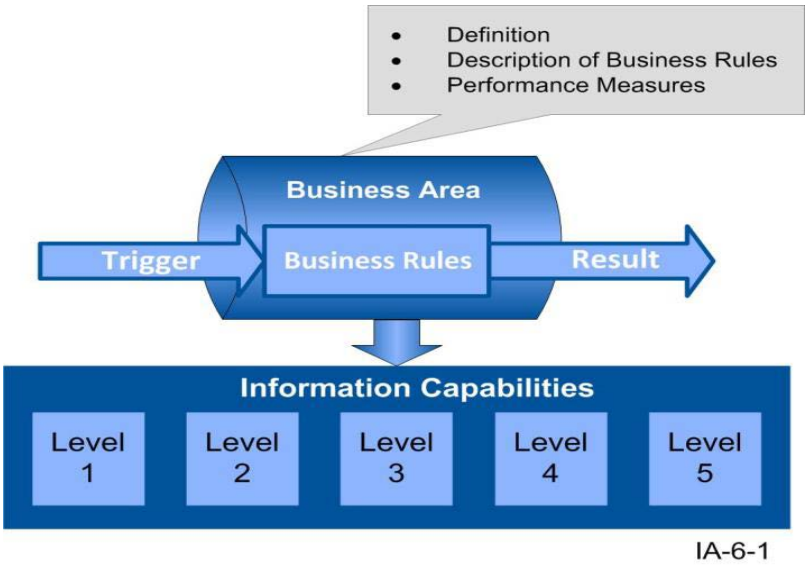
Figure 23: MITA Model and Design Repository from the MITA 3.0 Framework



G) INFORMATION CAPABILITY MATRIX

The Information Capability Matrix (ICM) describes each IA component (Data Management Strategy, Conceptual Data Model, Logical Data Model, and Data Standards) at a specific level of MITA maturity. The IA capabilities used in the ICM result from applying the MITA Maturity Model's definitions of the five levels of maturity to each business process to derive specific information architecture capabilities.

Figure 24: Each Information Architecture as 5 levels from the MITA 3.0 Framework



High-level capability descriptions:

- **Level 1 Capabilities:** Are predominantly manually intensive, IA components that do not take advantage of current industry standards.
- **Level 2 Capabilities:** Are a mix of manually intensive components and electronic transactions or automated functionality internal to the SMA.
- **Level 3 Capabilities:** Adoption of a governance process, a CDM, a LDM, enterprise modeling, the MITA Framework, industry standards, and other nationally recognized standards for intrastate exchange of information. Partners include one or more state agencies.
- **Level 4 Capabilities:** Include interoperability amongst all appropriate state agencies, regional partners, regional Health Insurance Exchange (HIX), regional Health Information Exchange (HIE), and other external regional health care stakeholders.
- **Level 5 Capabilities:** Include interoperability amongst all appropriate state agencies, regional partners, federal agencies, national Health Insurance Exchange (HIX), national Health Information Exchange (HIE), and other national external health care stakeholders.

MITA Guideline on Levels of maturity is assessed for Data Management Strategy:

Table 6: Data Management Strategy (DMS)

	Level 1	*Level 2*	*Level 3*	*Level 4*	*Level 5*
Does business area have governance of data management?	No data governance implemented.	Implementation of internal policy and procedures to promote data governance, data stewards, data owners, and data policy.	Adoption of governance process and structure to promote trusted data governance, data stewards, data owners, data policy, and controls redundancy within intrastate.	Participation in governance, stewardship, and management process with regional agencies to promote sharing of Medicaid resources.	Participation in governance, stewardship, and management process with Centers for Medicare & Medicaid Services (CMS) and other national agencies and groups to promote sharing of Medicaid resources.
Does business area have common data architecture?	No standards for data architecture development.	Implementation of internal policy and procedures to promote data documentation, development, and management where the SMA defines data entities, attributes, data models, and relationships sufficiently to convey the overall meaning and use of Medicaid data and information.	Adoption of intrastate metadata repository where the SMA defines the data entities, attributes, data models, and relationships sufficiently to convey the overall meaning and use of Medicaid data and information.	Adoption of a regional metadata repository where the SMA defines the data entities, attributes, data models, and relationships sufficiently to convey the overall meaning and use of Medicaid data and information.	Adoption of a national centralized metadata repository where the SMA defines the data entities, attributes, data models, and relationships sufficiently to convey the overall meaning and use of Medicaid data and information

H) DATA INTEGRATION/ ETL DEVELOPMENT

The Contractor shall support all aspects of development of the EDWS including creating tables, developing ETL scripts, scheduling ETL jobs, loading historical data, metadata management and establishing data quality monitoring and data profiling process, setup security (user roles and privileges) and assist in the database management tasks.

The EDWS Contractor shall coordinate with the ISS Contractor, who is responsible to provide secure data exchange between the application modules within an agreed upon SLA using canonical data format, standards and protocols. The ISS shall develop SOA based services based on the design principles as described in the MITA 3.0 Framework (e.g., Standardized Contract, Loose Coupling, Abstraction, Reusability, Autonomy, Statelessness, Discoverability and Composability). The ISS shall also develop

service messaging standards for real-time, batch for business domain to business domain and cross organizational communication.

Standard EDWS version control and change control processes shall be used throughout the project life cycle.

I) TESTING

Testing capabilities shall be required to be provided by the selected Contractor. These capabilities shall be addressed by the Contractor in its Proposal.

1. **Test Plan** – At the start of the DDI phase, the selected Contractor shall propose a template for a Test Plan that shall conform to the minimum requirements of the DMAS Project Delivery Framework test plan and is acceptable to the DMAS EDWS Management Team.
2. **Test Scenarios** – Contractor shall describe in its proposal how it plans to develop test scenarios for test phases that it is responsible for and how it plans to coordinate with business users and stakeholders for each release for the creation of UAT, Load and Stress Test, and Release Acceptance testing.
3. **Defect Tracking** – A description of the approach and components for defect tracking shall be included in the Contractor's proposal.
4. **Disaster Recovery Testing** – The Contractor shall also describe in its proposal how it plans to maintain and routinely test DR process and to ensure that the DR environment is up-to date for use in case of an emergency. The Contractor must demonstrate a process to measure and report defects and defect removal efficiency based on Severity types across all SDLC phases of the EDWS implementation.

Testing requirements detail shall be addressed by the Contractor in its proposal.

The Contractor shall address and adhere to the requirements related to testing described in Appendix J.3 – Testing.

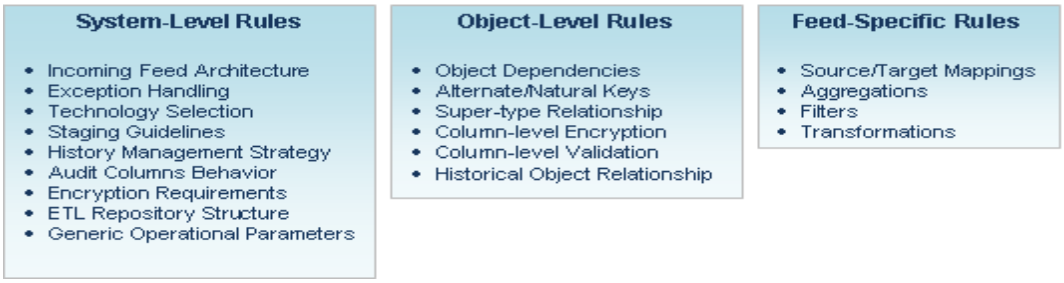
J) IMPLEMENTATION SUPPORT

The Contractor shall address the plan to facilitate staggered implementation of DMAS EDWS in an efficient manner, resulting in reduced costs, shorter timelines and lower risks. In the proposal, the Contractor shall cover all necessary aspects of the data warehouse implementation through which all the specifications transition from a logical representation into executable.

The Contractor shall address the following:

1. Establish a methodology that shall be followed throughout a lifetime of a data warehouse
2. Keep the costs and timelines of the methodology definition phase low by providing predefined customizable solutions
3. Eliminate the need to re-specify a large amount of rules, applicable on system level, further down in the project, ensuring a high level of consistency across all data warehouse components

Figure 25: Implementation Support Components



The Contractor shall ensure that new module is fully tested and system changes are well documented prior to inclusion in the Production environment. Here is the list of required documents.

The Contractor shall address and adhere to the requirements related to Implementation Support described in Appendix J.28 – Contractor Support

K) Project Management

The proposal must describe the Contractor's philosophy, methodology, and approach to manage the EDWS project throughout the lifecycle of the project. Describe the methods, tools, and techniques the proposer intends to use in providing project management services; provide a description of key methods or techniques; provide a high-level project plan and schedule (identifying major milestones and deliverables); describe the Contractor's approach to managing the schedule, controlling costs, mitigating risk, and limiting "scope expansion" to the project. The Department expects both the project plan and the schedule to undergo significant refinement during the planning phase of the project. For each major milestone and deliverable, the Contractor shall identify the roles and responsibilities of Contractor and DMAS staff in the completion of each deliverable. Please refer to Section 5, Project Management and Governance, for more details.

L) Training Documentation

Training for EDWS users, developers, analysts and administrators shall be conducted by the Contractor before each EDWS release. Training shall be hands-on and specific to user roles. All training shall be conducted in the Richmond area.

The Contractor shall address and adhere to the requirements related to Training described in Appendix J.26 – Training

M) Documentation

Project operations documentation requirements for the EDWS and all supporting operations throughout the contract, listed in Appendix J, shall be routinely maintained and updated to ensure that Department and Contractor staff always have access to the most current information. Requirements apply to both paper copy and electronic documentation, such as meeting minutes, manuals, and tracking systems.

Documents such as models, diagrams, work plans, meeting minutes, interview notes, and other artifacts created by the Contractor as ancillary to the deliverables, but which are not subject to the acceptance process and payment for Services is not dependent on their submission. Any and all Products generated by the Contractor during the course of and pertaining to this project shall be provided to DMAS upon

request. The Contractor shall address and adhere to the requirements related to documentation described in Appendix J.16 – Documentation Management.

3.b.7.2. POST-IMPLEMENTATION PRODUCTION SUPPORT

The Contractor shall provide post-implementation support after every release and until six (6) months after ETL for all source applications is established. All general activities and tasks including operations, maintenance and technical support shall be provided by the Contractor to support the operations and administration of the EDWS. These requirements also include ongoing administration required to manage software updates and patches, data partitioning, indexes, statistics updates, file vacuuming, and scaling.

A) SYSTEM MAINTENANCE

System maintenance includes at the minimum the following types of maintenance support:

- Data maintenance activities for updates to tables, including database support activities
- Activities necessary to correct deficiencies (i.e., incorrect data load or transformation logic, incorrect report calculations, etc.) within the EDWS, including deficiencies found after implementation
- Activities necessary for the EDWS to meet the performance requirements detailed in this RFP, including operations support and maintaining optimal operational level
- Activities necessary to ensure that data, tables, programs, and documentation are current and those errors are found and corrected
- Changes to scripts or system parameters concerning the frequency, number, sorting, and media of reports
- Addition of new values or changes

B) SYSTEM MODIFICATION

A modification occurs when the Department or the Contractor determines that an additional requirement needs to be met, resulting in a change to EDWS design, existing table structures or current processing logic. Modification support includes:

- Implementation of new or enhanced capabilities not currently available in the EDWS
- Changes to established report, analytics, screen, or electronic media formats, including new data sources, new data elements or report items
- Activities to improve efficiencies of the existing system to exceed the requirements presented in this RFP and to streamline processing

Changes to the software and other component parts of the EDWS shall be made and tracked through the System Maintenance and Modification process. This section describes how future changes to the EDWS shall be categorized, including minimum staffing requirements and activities that shall be performed.

Changes to the EDWS shall be categorized as either maintenance or modification and shall be reviewed and approved by the Department, in accordance with a Department-approved Change Control Process.

Post-Implementation Support requirements are included in the Appendix J.33 – Post-Implementation Support.

3.b.7.3. Oversight Requirements and Responsibilities

This section presents the general operational requirements necessary to support the successful administration of all components of the EDWS. The following requirements represent tasks and activities that apply to several business functions and shall be implemented according to the business need.

Project Operations – includes general activities that support the operation of the EDWS such as establishing a Contractor Facility, maintaining core hours of operation, developing policies and procedures and providing administrative reporting capabilities.

The Contractor shall describe in its proposal its approach for the general EDWS operations functions outlined in the following subsections.

A) Contractor Support

The Contractor shall recommend approach to provide DDI support during and after project implementation. The Contractor shall either set up a facility in Richmond or co-locate with DMAS staff for key personnel. DMAS shall determine the staffing requirements based on the phase of the project and effectiveness of the Contractor team.

The Contractor shall address and adhere to the requirements related to Contractor Support described in Appendix J.28 – Contractor Support.

B) Hours of Operation

The day-to-day operations necessary to perform the tasks and activities defined in this RFP shall be performed as defined in the hours of operations requirements.

The Contractor shall address and adhere to the requirements related to hours of operation described in Appendix J.29 – Hours of Operation.

3.b.8. Service-Level Agreements (SLA) and Performance Standards

EDWS SLAs and Performance Standards

EDWS SLAs and Performance Standards play an important role in defining and managing the relationship between the selected Contractor, Department of Medical Assistance (DMAS), and the EDWS business users and stakeholders. SLAs and Performances Standards define the service delivery time and performance expected that Contractor responding to the RFP shall address in its proposal. A successfully implemented service-level and performance standards management disciple ensures that information system functions efficiently while fulfilling the desired business needs. SLA and Performance Standards requirements include system availability, accessibility, performance, and response times. They also are in the areas of business continuity response times (disaster recovery), problem management and resolution response times (preventative measurements and minimizing impacts of incidents), and data quality thresholds to increase efficiency, enhance customer service, and control costs.

In close cooperation with the Department, the Contractor shall develop a set of SLAs and Performance Standards that appropriately address the developing business and service needs to support the system and operations, allow for clear understanding of priorities when handling service problems, and manage customer expectations for levels of service and performance expectations to be delivered. To ensure that the operations and administration of the contract are performed to the Department's satisfaction, the resulting SLAs and Performance Standards shall support the various operations, maintenance, and technical requirements, as well as any applicable hosting a system migration requirements outlined in this RFP.

Over the life of the contract, it is the Contractor's responsibility to develop the measurement tool and manage the following processes, SLAs and Performance Standards defined in requirements, to meet the performance management objectives for the EDWS.

The Contractor shall address and adhere to the requirements related to the EDWS SLAs described in Appendix A – Service-Level Agreements and Appendix J.30 – EDWS Performance Standards.

3.c. DMAS Defined Options

DMAS has identified some requirements that it will consider optional, meaning DMAS will maintain the option to include the related requirements in the Integrated Services Solution. There are two types of DMAS defined options.

Mandatory Pricing

DMAS defined options with mandatory pricing must be described in the Contractor's proposal and a price must be submitted in Appendix C, Price Schedule J. This section describes the DMAS defined options that have mandatory pricing, and identifies the related requirements in Appendix J.

Optional Pricing

DMAS defined options with optional pricing may be described in the Contractor's proposal at the discretion of the Contractor. If the Contractor chooses to address a DMAS defined option with optional pricing, the price must be submitted in Appendix C, Price Schedule J. This section describes the DMAS defined options that have optional pricing, and identifies the related requirements in Appendix J.

The price for mandatory and optional pricing options will not be considered as part of the baseline price proposal used for evaluation.

3.c.1. Mandatory Pricing Options

There are no additional EDWS options with mandatory pricing.

3.c.2. Optional Pricing Options

There is one (1) EDWS option with optional pricing.

3.c.2.1. Meeting Space

The EDWS Contractor shall provide appropriate space to conduct meetings during the DDI phase that require DMAS staff attendance, including but not limited to JADs, walkthroughs, and team meetings. The space would ideally be within walking distance of the DMAS offices, but must be no more than 3

miles from 600 East Broad Street. Include the number of sessions, length of sessions, and capacity in your proposal. The proposed meeting space should be fully functional to ensure productivity, including but not limited to accommodate teleconferences, connectivity for WebEx meetings, projector equipment and white boards.

The requirements relating to Meeting Space are provided in Appendix J.36.a – Meeting Space.

4. PRICING INFORMATION

Offerors shall submit all pricing data in their Pricing Proposal (see RFP Section 9.b, Proposal Format, for detailed instructions) using the Microsoft Excel Pricing Submittal spreadsheet provided in Appendix C – Pricing. Altered formats or blank data will be considered incomplete and may be eliminated from further consideration.

The Offeror's Pricing Proposal shall include eVA fees and all charges of any kind associated with the Solution. DMAS will not be liable for any fees or charges for the Solution that are not set forth in the Pricing Proposal spreadsheet. Any attempt to add these fees to submitted pricing will not be considered.

The Offeror shall be willing and able to successfully implement the Solution for their proposed price(s) and to complete the project on a firm, fixed-price basis.

The Pricing Proposal information in the Offeror's Pricing Proposal shall be valid for at least 180 calendar days from the Proposal submission date. If the Offeror is reserving the option to withdraw the pricing during that period, it shall state so clearly in its Pricing Proposal.

The Offeror shall provide detailed pricing for each of the pricing methods set forth. Pricing shall be comprehensive. Additional information and backup detail shall be attached as appropriate. Any scheduled price change shall be identified, and actual new prices and proposed effective dates shall be stated.

The Offeror shall disclose pricing assumptions where possible. For example, if unit price is based on a certain volume, that assumption shall be indicated. Offeror shall clearly identify any discount targets/ranges available.

5. PROJECT MANAGEMENT AND GOVERNANCE

5.a. STATE PROJECT GOVERNANCE

Under the direction of the Secretary of Technology and the State Chief Information Officer (CIO), the VITA Project Management Division (PMD) implemented an enterprise strategy for the effective and efficient management of information technology investments. The selection, control, and evaluation of State business-driven IT investments by the Secretary and CIO are framed by IT Investment Management (ITIM) principles, ITIM "best practices" from both the public and private sectors, and legislative mandates in the Code of Virginia.

Project Management governance involves participation from the following groups: VITA, the DMAS MES PMO Director, IV&V, and a PMO assigned Project Manager.

VITA Oversight: State project oversight and project governance requirements are managed by the VITA PMD. The VITA PMD assigns representatives to each agency in order to oversee IT project management. VITA makes recommendations to the State CIO for approvals. Each agency conducts monthly intra-agency oversight committee (IAOC) meetings with a VITA PMD representative, where the agency reports on the project's status. Also, projects are tracked and monitored through the State Technology Portfolio online management tool.

DMAS PMO Oversight: The DMAS Agency Project Sponsor, Agency CIO, MES PMO Director, Project Managers, and Business Owners participate in a monthly IAOC meeting with a dedicated VITA PMD representative in accordance with Department Project Management guidelines and practices. The MES Program Director establishes the program status reporting and standards for the MES program. The MES Program Director oversees weekly and monthly reporting on the project's status. The program status reporting to stakeholders reflects a summary of individual project status reports, as well as oversight activities, and includes the following plans:

- Program Governance Quality Management Plan
- Program Integration and Architectural Plan
- Program Communications Management Plan
- Program Risks and Issues Management Plan
- Program Resource Management Plan
- Program Financial Management Plan
- Program Procurement Management Plan
- Program Change and Configuration Management Plan
- Program Implementation and Transition to Operations Management Plan
- Program Post-Implementation Review Plan

CMS required IV&V oversight: The Department shall contract with an IV&V contractor to provide the required oversight as required by CMS. The IV&V contractor shall comply with 45 CFR 95.626 – Independent Verification and Validation. The IV&V contractor provides oversight of the MES DDI. This oversight assures the following:

- Compliance with the CMS Seven Conditions and Standards
- Project alignment to the MITA 3.0 Framework
- Development and testing
- Readiness for CMS certification milestone reviews

The IV&V contractor performs the following services during development:

- Oversees and reports on development activities
- Conducts SDLC reviews
- Supports CMS certification milestone reviews
- Provides reports to CMS on the project's progress

PMO Assigned Project Manager Oversight: The PMO provides qualified project managers who are responsible for individual MES Solution implementations. The Department shall follow defined VITA project management governance requirements to include the following areas for each project: Investment Business Case Approval, Project Initiation Approval, Detailed Planning, Execution and Control, and Closeout approval. The PMO shall establish standards for project performance. The Department Project Manager shall provide the VITA PMD with project plans that include input derived from the Contractor's project plans and include, but are not limited to, the following:

- Project Quality Management Plan
- Project Work Plan
- Project Performance Reporting Summary
- Project Communications Management Plan
- Project Risks and Issues Management Plan
- Project Staff Acquisition Plan
- Project Hardware and Equipment Acquisition Plan
- Project Software Acquisition and Installation Plan
- Project Documentation Management Plan
- Training Plan
- Project Change and Configuration Management Plan
- Project Implementation and Transition to Operations Management Plan
- Disaster Recovery Plan
- Business Continuity Plan
- Project Evaluation Plan

Department project managers are responsible for monitoring and resolving issues and risks, as well as their escalation, when needed. Risks and issues shall be tracked and reported weekly, and monthly status is provided to the IAOC. Projects are entered by the Department Project Manager into the State Technology Portfolio, and they are tracked and monitored by the VITA PMD and the MES PMO.

The Department shall provide an implementation project team that shall consist of a business owner(s), subject matter experts, information technology systems analysts, and technical team members. The Department may call upon other Department or contracting resources if needed.

The Department shall also provide an Enterprise Systems Architect responsible for technical standards to be used for project integration. The Enterprise Systems Architect shall work closely with VITA and the ISS Contractor. The Enterprise Systems Architect shall be supported by the DMAS Integration Project Team. Enterprise security shall be the responsibility of the DMAS Integration Project Team.

5.a.1. DMAS Deliverable Submission and Review Process

Contractor shall follow the deliverable submission and review process outlined below for both DDI and Operations deliverables requiring DMAS approval.

Design, Development, and Implementation

Using an agreed upon version control process, deliverables shall be sent by the Contractor to the MES PMO Deliverable Coordinator for review and approval by DMAS authorized staff. Unless otherwise specified in a DMAS approved work plan or schedule, below is the DMAS standard deliverable review timetable:

- DMAS has 10 business days from the first day following receipt of a deliverable to approve or reject the deliverable.
- Upon receipt of a rejected deliverable, Contractor shall have five (5) business days to make corrections and return the revised deliverable to DMAS for review.
- Until the deliverable is approved, DMAS has five (5) business days from first day following receipt of the revised deliverable to approve or reject the deliverable.

Operations

Using an agreed upon version control process, deliverables shall be sent by the Contractor to the DMAS Change Management Office for review and approval by DMAS authorized staff. Unless otherwise specified in a DMAS approved work plan or schedule, below is the DMAS standard deliverable review timetable:

- DMAS has 10 business days from the first day following receipt of deliverable to approve or reject deliverable.
- Upon receipt of rejected deliverable, Contractor shall have five (5) business days to make corrections and return the revised deliverable to DMAS for review.
- Until the deliverable is approved, DMAS has five (5) business days from first day following receipt of the revised deliverable to approve or reject the deliverable.

5.b. CONTRACTOR PROJECT MANAGEMENT

For the Virginia MES, it is expected that the Contractor shall propose a standard project management methodology with existing project templates and tools used to implement a proposed solution. The Contractor's project team shall consist of a dedicated Project Manager, along with the necessary supporting project team. The Contractor's Project Manager shall collaborate with the Department PMO and support any Department project plans as needed. A project resourcing plan shall be required, and the Contractor's staff shall be required to have the necessary knowledge, skills, and abilities to complete the tasks associated with the project's scope.

Master Work Plan: The Contractor shall submit an implementation milestone schedule for the proposed solution as part of their response to this RFP. Contractor shall provide an initial Master Work Plan with their proposal, utilizing Appendix I to inform due dates and timeframes for deliverable submission.

The schedule shall incorporate proposed Department dependent activities and milestones. A detailed work plan using Microsoft® Project shall be jointly established with the Department PMO during the project planning phase. The Contractor shall propose a schedule that assumes a combined (Department and Contractor) master work plan. The detailed project master work plan shall be maintained on a weekly basis.

MES Implementation Roadmap and Status: The Contractor shall participate in Department Program Management meetings every other week and Project Management meetings each week to discuss cross project impacts. The Department PMO shall monitor the Contractor's progress utilizing State technology standards. This monitoring effort may require the Contractor to provide technology updates and proof of use of standards. The DMAS PMO Director shall provide a status of the overall progress with the MES implementation roadmap on a monthly basis.

Associate Supplier Agreement: The Contractor shall interact with Department contracting entities, the IV&V contractor, Department staff, and other prime contractors. Since a MES is dependent on collaboration, the Department shall expect the Contractor to create and execute an Associate Supplier Agreement.

Design, Development and Implementation (DDI) project measurement: Once requirements are finalized, a scope document shall be agreed to. The Contractor shall propose a baseline milestone table for the DDI which shall incorporate Department milestones. The Contractor shall also provide a proposed deliverable chart and once approved, the deliverable chart, the baselined milestone table, and the work breakdown structure shall be used to manage the project's progress.

A joint Release Management methodology shall be agreed to by the Department and the Contractor and incorporated into Change Management.

Operations and Maintenance project measurement: Post DDI completion, for any defined release or project, status reporting shall be continued on a weekly basis. A joint Release Management methodology shall be agreed to by the Department and the Contractor and incorporated into Change Management.

Escalation Process: The Contractor shall propose an escalation chain of command for elevating risks and issues to begin with the Department Project Manager and include the reporting structure for the organization. The chain of command shall indicate a point of contact to communicate with the stakeholder leadership and shall include the DMAS CIO, DMAS Deputy Director, DMAS Medicaid Director, the State CIO, and the Secretary of Health and Human Resources.

IV&V: The Department shall contract with an IV&V contractor. CMS requires the IV&V contractor to provide periodic reports on the project's health and alignment with the MITA 3.0 Framework, as well as adhering to the Seven Conditions and Standards. The Contractor shall work with the Department, the IV&V contractor, and CMS representatives throughout the life of the DDI phase, as well as during the beginning of the operational phase. A Medicaid Enterprise Certification Toolkit (MECT) checklist shall be used as one of the tools for the periodic assessment reporting conducted by the IV&V contractor. The IV&V Contractor serves as the CMS point of contact as the MES moves toward achieving certification. The Contractor shall ensure the solution provided meets CMS's certification requirements.

For more detail on the Project Management Requirements See Appendix J.2 – Major Milestones and Deliverables.

6. Contractor Profile and Key Personnel

6.a. Contractor Proposal Compliance

Before submitting its proposal, the Contractor shall verify the following: (i) the proposal is accurate and complete; (ii) the proposal is prepared in accordance with the solicitation requirements, including providing all information, content, responses, and appendices requested; and (iii) all required communication, format, and submission instructions are followed.

The Contractor shall submit an affirmation of the above compliance requirements (i)-(iii), signed by an authorized representative.

6.b. Contractor Corporate Overview

6.b.1. Business (not to exceed 5 pages)

State your company's core business/service offerings, background, and relevant experience in the market.

If you are proposing the use of a subcontractor(s) to perform 10% or more of the contract value, provide the same information for each company.

6.b.2. Corporate Identity (not to exceed 1 page)

Provide the address, phone and fax numbers, FEIN or tax ID number, company web site, and contact email, including for any parent corporation or any subsidiaries, as applicable.

If you are proposing the use of a subcontractor(s) to perform 10% or more of the contract value, provide the same information for each company.

6.b.3. Organization and Structure

Provide an overview of your organizational operating structure that includes the following:

- A written description and accompanying corporate organization chart that demonstrates the relationship(s) between the operational and functional business units of your company and how they relate to providing the EDWS requested in this RFP.
- Indicate whether you propose the use of a subcontractor(s) to carry out the scope of work requested in this RFP. If you do propose the use of a subcontractor, describe your process for onboarding and integrating into the team that will be carrying out the scope of work requested in this RFP.

6.b.4. Locations

Describe the geographical location of your firm at the national, regional, and local levels, as applicable.

- Identify all locations that will be used to support a resultant contract and the operations handled from these locations.

- Clearly identify any overseas locations which may be used to support the resultant contract or any related data transactions.

6.b.5. Strategic Relationships

Identify strategic relationships, either past or current, with other related Contractors who perform similar work to that described in this RFP, or the other four (4) MES RFPs (described in Section 1.a.1) – for example, an ISS Contractor or an FMS Contractor.

State all subcontractors expected to be employed and the outsourced service/solution to be used in implementing the proposed Solution. DMAS reserves the right to request that the Contractor provide all the information described in this section for any and all major (i.e., over 10% of the contract value) subcontractors proposed.

6.b.6. ISO 900X Certification

Please indicate if your firm is ISO certified. Yes or no is sufficient. If "yes," identify the area(s) certified (e.g., services, manufacturing, etc.), the expiration dates for certification, and also include proof of certification.

6.b.7. Council for Affordable Quality Healthcare Certification

The Contractor shall indicate if it is Council for Affordable Quality Healthcare (CAQH) certified. Yes or no is sufficient. If "yes," the Contractor shall identify the area(s) in which it is certified, the expiration dates for certification, and also include proof of certification.

6.c. Financial Information

6.c.1. Total Annual Revenue

Please state your firm's total annual revenue and indicate how much of this revenue is derived from the provision of services/solution relevant to the scope of work requested in this RFP.

6.c.2. Dun and Bradstreet Supplier Qualifier Report

Include your firm's current, full Dun and Bradstreet (D&B) Supplier Qualifier Report (SQR), if D&B has issued the SQR on your company.

6.c.3. Annual Reports

Please provide certified, audited financial statements (i.e., income statements, balance sheets, cash flow statements) for the most recent three (3) years. (Contractors having been in business for a shorter period of time are requested to submit any available certified, audited annual financial statements.) DMAS may request copies of, or access to, current and historic annual reports. DMAS reserves the right to access a Contractor's publicly available financial information and to consider such information in its evaluation of the Contractor's proposal.

For Contractor's convenience, these statements may be included as an Appendix to the Volume 1 – Technical Proposal, or included only electronically on the Volume 1 – Technical Proposal CD-ROM.

6.d. Future, Long Term Vision, and Strategic Plans

Provide information on your company's future, long-term vision, and strategic plans as they relate to the proposed Solution.

- This shall include a description of how your company plans to support emerging technologies and industry standards.

6.e. Contractor Experience Level and Customer References

The Contractor shall demonstrate a proven record of providing Solutions of similar scope and complexity to those defined in Section 3, Scope of Work. Provide three (3) customer references, preferably from within the past five (5) years, with the requested information contained below in Table 7. DMAS will make such reasonable investigations as deemed proper and necessary to determine the ability of a Contractor to perform a resultant contract. These may include, but may not be limited to, reference checks and interviews. The references shall be from organizations where the Contractor is providing (or has provided) Solutions that are similar in type and scope to those identified in Section 3, Scope of Work. DMAS shall not be listed as a reference by the Contractor.

On the following page, DMAS provides a table to utilize for each customer reference (**table to be repeated three (3) times, one (1) per reference**). The Contractor may adjust the table for purposes of formatting (e.g., Project Description row may break across multiple pages), but the actual content shall not be changed.

The Contractor is strongly encouraged to provide more than one point of contact for each reference. However, if necessary, the same contact information may be used.

Table 7: Customer Reference Information Table

Requested Information	Contractor Response
Customer Name	**(e.g., Company, State Department, etc.)**
Project Name:	
Contract Number:	
Customer Point of Contact and Contact Information:	[Name] [E-mail] [Phone]
Customer Project Manager and Contact Information:	[Name] [E-mail] [Phone]
Customer Contract Manager and Contact Information:	[Name] [E-mail] [Phone]
Project Dates:	MM/YYYY – MM/YYYY
Project Description:	
Case Study Results:	[Provide a synopsis or case study of project results related to increased quality, increased operating efficiency, etc. This is requested to demonstrate the added value the Contractor offered and to indicate the typical on-going cost reductions and Solution efficiencies DMAS could similarly expect to realize.]

Contractor shall use one table per customer reference.

6.f. Support Management and Personnel

6.f.1. Steering Committee

By submitting a proposal, the Contractor agrees that it shall, if awarded a contract pursuant to this RFP, participate in Steering Committee meeting(s) which are described in the Steering Committee section of the contract template found in Appendix H – Contract Template of this RFP.

Please identify the titles and areas of responsibility of persons your firm would commit to serve on this Steering Committee.

6.f.2. Project Team

The Contractor is responsible for proposing "key" personnel in accordance with DMAS' roles defined in Section 6.f.3, Contractor Personnel. The Contractor may propose additional personnel as it sees fit.

The Contractor shall provide the following information related to its proposed team:

Resumes

- Provide the resumes of all key members of the Contractor's team; resumes for non-key personnel are preferred, should they add value to the evaluation of the proposed Solution, but are not required.
- DMAS reserves the right to request replacement candidates for any role proposed by the Contractor; replacement candidates' qualifications should meet or exceed those of the originally proposed candidate, as demonstrated via resume.

References

- Provide at least two (2) references each for all key personnel. References should include: name; title; company/organization; e-mail; phone number; and a brief description of the professional relationship of the reference to the proposed team member.

Time Commitment

- Provide the percentage of time proposed personnel are expected to be assigned to this contract. The Contractor shall be required to involve DMAS in the selection and rotation of any key team members assigned.
- For each proposed project team member, indicate the percentage of time that the team member will be dedicated onsite.

Project Organization

- Describe the level of access to company leadership that the proposed project team members have within your organization, and describe the decision-making authority they have to commit resources to meet unexpected surges in activity and/or to respond to service issues.
- Include a project organization chart (for both DDI and Operations teams) that demonstrates the project team's reporting relationship to company leadership.

6.f.3. CONTRACTOR PERSONNEL

The roles and related qualifications listed in the table below represent preferred requirements for the Contractor personnel proposed for this engagement. Additional relevant experience may be substituted for educational requirements. In proposed personnel resumes, the Contractor shall demonstrate how each proposed team member fulfills the following requirements specified for their role (Tables 8 and 9), as well as general expectations for the position, including but not limited to:

- Ability to effectively communicate with appropriate levels within the Contractor's organization and MES program team
- Experience with MITA 3.0 Framework including the Seven Conditions and Standards
- Ability to solve problems and resolve conflicts

Table 8: DDI Key Personnel Requirements

DDI Role	Years of Medicaid or Health Plan Experience	Preferred Minimum Years of Experience in Role	Richmond Based	Education/ Certification
Hardware/Infrastructure Specialist	N/A	10 years	Depends on the hosting solution	Degree in Information Systems or equivalent experience
Network Engineer	N/A	8-10 years	Depends on the solution	Degree in Information Systems or equivalent experience
Data Architect/ Data Modeler /Database and Data Mart designer	No less than 4 years	10 years	Yes	Degree in Information Systems or equivalent experience
Senior ETL Engineer and Database Developer	No less than 4 years	7-10 years	Yes	Degree in Information Systems or equivalent experience
Database Administrator (DBA)	N/A	7-10 years	Yes	Any database certification relevant to the solution
Health care data warehouse specialist and Requirements Engineer	10-15 years	15 years	Yes	Certified Business Analysis Professional (CBAP)
Quality Assurance and Testing Engineer	No less than 4 years	5-10 years	Yes	Degree in Information Systems or equivalent experience
Metadata Management Specialist	2-4 years	5-10 years	Yes	Degree in Information Systems or equivalent experience

DDI Role	Years of Medicaid or Health Plan Experience	Preferred Minimum Years of Experience in Role	Richmond Based	Education/ Certification
ETL Engineer and Database Developer	2-7 years	2-7 years	Yes	Degree in Information Systems or equivalent experience
Data Quality Monitoring tool Administrator & Specialist	2-5 years	5-10 years	Yes	CIMP Certification
Report Developer and BI Specialist	No less than 4 years	5-10	Yes	SAS certification or any relevant BI certification, Tableau expert, depending on the solution
Security Specialist	N/A	7-10	Yes	CCNA certification with Security concentration or CCSP

Table 9: Operations Key Personnel Requirements

Operations Role	Years of Medicaid or Health Plan Experience	Preferred Minimum Years of Experience in Role	Richmond Based	Education/ Certification
Help Desk/Call center representative	N/A	1-4 years	Not necessary	
Technical Production support	2-5 years	2-5 years	Not	
Project Manager	Data warehouse and Healthcare experience preferred	5- 10 years	Yes	PMP, Scrum Master
Accounts Manager	Data warehouse and Healthcare experience preferred	5- 10 years	Yes	Degree in Business Administration or equivalent experience
ETL Engineer	1-3 years	2-5 years	Yes	

Operations Role	Years of Medicaid or Health Plan Experience	Preferred Minimum Years of Experience in Role	Richmond Based	Education/ Certification
DBA	N/A	2-5 years (Depends on support level, criticality and response time)	Yes	Any database certification relevant to the solution
Hardware/Infrastructure Specialist	N/A	2-5 years (Depends on support level, criticality and response time)	Depending on hosting solution	
Data Architect and Data Modeler	2-5 years	5-10 years	Yes (during design phase)	

Note: "Optional" for **Richmond Based** will still require that the individual filling the role be onsite as needed, such as for specific phases and periodic meetings.

7. PERFORMANCE STANDARDS

The Department will set standards for the Design, Development and Implementation (DDI) Project Stage and the Operations and Maintenance (O&M) years for the solution.

The Department will implement Quality Management standards for the design, development and Implementation stages of the project. The Performance Standards will be linked to Quality Maintenance Payments under the Contract. The Contractor shall receive a Quality Maintenance Payment following the successful completion of the Contract Requirement and by meeting mutually agreed upon deliverables and milestones with associated payments. Quality Maintenance Payments do not provide the Contractor any additional reimbursement. Instead, the Contractor shall maintain the Performance Standards established under the Contract to receive the entire payment amount under the Contract.

The Department will set standards for the Operations and Maintenance quality management. The current Operations and Maintenance Service Level Agreements (SLAs) are designed for the contractor to meet the agreed upon requirements for the operational product and services. SLAs define the service delivery time and performance expectations that respondents to this Request for Proposal (RFP) will address in their proposals.

Throughout the contract and in close cooperation with the Department, the Contractor will be called upon to propose additional SLAs that appropriately address the developing business and service needs to support the system's future performance and operations, allowing for a clear understanding of priorities when handling service problems, and manage customer expectations for levels of service to be delivered. Through a contract modification process, the operations and administration of the contract are performed to the Department's satisfaction. The resulting future SLAs will support the various operations, maintenance, and technical requirements, as well as any applicable hosting and system migration requirements. The current SLA standards are identified in Appendix A.

8. CONTRACT STANDARDS

Any resulting agreement shall be defined by a written contract, which shall be binding only when fully executed by both parties. A copy of DMAS' standard Solution contract is provided as part of this RFP as a separate MS Word document in Appendix H – Contract Template, titled "Enterprise Data Warehouse Solution."

In the event Contractor is a software reseller, DMAS will consider the software publisher's license agreement language if the software publisher requires an End User License Agreement (EULA). In such case, Contractor is advised that DMAS will require Contractor to obtain DMAS' License Agreement Addendum to such EULA to address terms and conditions in such EULA with which DMAS, as a government entity, by law or by policy, cannot agree.

If a Contractor's proposed Solution requires DMAS to execute an EULA, Contractor shall contact the Single Point of Contact (SPOC), who will provide Contractor with DMAS' License Agreement Addendum terms.

The final terms and conditions of the contract shall be agreed upon during negotiations; however, DMAS' business requirements are embodied in its standard agreements, and Contractor is to give them the same careful review and consideration as the other requirements set forth in this RFP.

Provide your comments regarding any exceptions in the form of margin notes/comments and redline the document with your suggested language, where required. Contractors are encouraged to utilize the SPOC to address any questions you may have regarding any part of the DMAS Contract Template during the question and answer period.

Include the completed table below in your response to this RFP.

Table 10: Standard Requirements

Item	Contractor's Response (Y or N)
Do you agree that the contents of your response to this RFP may become part of any contract that may be entered into as a result of this RFP?	
Will you agree to begin measuring the service-level (Appendix A – Service-Level Agreements) within 30 days of the start of the implementation of the Solution?	
The contract will include performance standards, measurement criteria, and significant corresponding financial remedies. Do you agree to include the Service-Levels and remedies for non-compliance as defined in Appendix A – Service-Level Agreements in the final contract?	
Do you agree to include mutually agreed upon cost reduction initiatives, which may be periodically updated during the term of the contract?	
Do you agree that all provisions of the DMAS Contract (Appendix H – Contract Template) NOT redlined or so noted are acceptable?	
Do you acknowledge that you will submit a Small Business (SWaM) Procurement Plan stating whether or not and how you will be utilizing small businesses in your proposal? (See Section 9.c., Small Business (SWaM) Procurement Plan)	

Item	Contractor's Response (Y or N)
Contractor acknowledges that no Federal funds may be used to obtain any Solution under a contract awarded, pursuant to this RFP, to any Contractor who appears on any excluded lists on the Federal government's System for Award Management (SAM) at www.sam.gov.	
If Contractor proposes a solution that will require the State to execute a EULA, either as a signed agreement or as "clickwrap", with a software manufacturer, Contractor shall, for each such software manufacturer, obtain the written consent of such software manufacturer to the terms and conditions of DMAS' License Agreement Addendum. Contractor shall contact the SPOC, who will provide Contractor with DMAS' License Agreement Addendum terms.	
Do you affirm that your response meets all of the Mandatory requirements listed in Section 9.a.15?	
Do you affirm that your organization is properly registered with the Virginia State Corporation Commission to conduct business in the State? Contractor is to complete Appendix D – State Corporation Commission Form and submit with its proposal.	
Do you affirm that your organization and all affiliates are current with all sales tax obligations to the State as of the due date of the proposals in response to this RFP?	
Do you agree to accept the following provisions? ➢ http://www.vita.virginia.gov/uploadedFiles/SCM/StatutorilyMandatedTsandCs.pdf; ➢ And the eVA provisions at: http://www.vita.virginia.gov/uploadedFiles/SCM/eVATsandCs.pdf ➢ The contractual claims provision §2.2-4363 of the Code of Virginia	
Do you affirm by submitting a proposal in response to this solicitation that you are not eligible and have/will not submit a proposal in response to the Integrated Services Solution procurement released by the Department of Medical Assistance Services?	

9. State Procurement Process

9.a. Proposal Instructions and Administration

9.a.1. Overview

This RFP was developed to provide potential Contractors (sometimes referred to as "Supplier(s)" and "Offeror" in State law citations) with the information required to prepare proposals. This section outlines the administrative procedures and guidelines for preparing a proposal. Nothing in this RFP constitutes an offer or an invitation to contract.

9.a.2. Virginia Public Procurement Act (VPPA)

This RFP is governed by the VPPA, § 2.2-4300 et seq. of the Code of Virginia, and other applicable laws.

9.a.3. Anti-Discrimination - §2.2-4343(1)(E), §2.2-4310 and §2.2-4311

By submitting their proposals, Offerors certify to the Commonwealth that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and §2.2-4311 of the Virginia Public Procurement Act.

9.a.4. Ethics in Public Contracting - §2.2-4367

By submitting their proposals, Offerors certify that their proposals are made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other bidder, supplier, manufacturer or subcontractor in connection with their proposal, and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

9.a.5. Announcement of Award - §2.2-4300 et seq.

Upon the award or the announcement of the decision to award a contract, as a result of this solicitation, the purchasing agency will post such notice on the Department of General Services (DGS), Division of Purchases and Supply (DPS) eVA web site (http://www.eva.virginia.gov) for a minimum of 10 days. No award decision will be provided verbally. Any final contract, including pricing, awarded as a result of this RFP shall be made available for public inspection.

9.a.6. AUTHORIZED TO TRANSACT BUSINESS IN THE COMMONWEALTH - § 2.2-4311.2

Any Contractor that is organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership shall be authorized to transact business as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the Code of Virginia or as otherwise required by law. Offeror is to include with its proposal either (i) Contractor's identification number issued to it by the State Corporation Commissioner (ii) a statement explaining why Offeror is not required to be registered. No award can be made to a Contractor without this information unless this requirement is waived. Appendix D – Commonwealth Corporation Commission Form of this RFP includes a space for Contractor to provide the information required in (i) or (ii) of this subsection.

9.a.7. PROHIBITED CONTRIBUTIONS AND GIFTS - § 2.2-4376.1

No Offeror who submits a proposal in response to this RFP, and no individual who is an officer or director of the Offeror, shall knowingly provide a contribution, gift, or other item with a value greater than $50 or make an express or implied promise to make such a contribution or gift to the Governor, his political action committee, or the Secretary of Technology during the period between the submission of the proposal and the award of any resulting contract award with an expected value of $5 million or more dollars. Offerors shall complete and submit Appendix E – Certificate of Compliance with Prohibition of Political Contributions and Gifts During the Procurement Process of this RFP.

9.a.8. LIABILITY

The issuance of this document and the receipt of information in response to this document will not cause DMAS to incur any liability or obligation, financial or otherwise, to any Contractor. DMAS assumes no obligation to reimburse or in any way compensate a Contractor for expenses incurred in connection with development of its proposal.

9.a.9. NONDISCLOSURE

All proposal information will be treated as confidential prior to posting the Notice of Intent to Award contract and will not be disclosed except as required by law or by court order. Prior to Award of the contract, proposal information may be disclosed as allowed under Virginia Code § 2.2-4342.D. After award of the contract, proposal information will be available to public inspection under § 2.2-4342 of the Virginia Public Procurement Act and the Virginia Freedom of Information Act.

9.a.10. PROPRIETARY INFORMATION

DMAS reserves the right to use, copy, and reproduce all documents, data, and other information submitted in response to the RFP in any manner DMAS may deem appropriate in evaluating the fitness of the solution(s) proposed, and in complying with applicable law. All data, materials, and documentation originated and prepared for DMAS pursuant to the RFP shall be subject to public inspection in accordance with §2.2-4342 of the Virginia Public Procurement Act and the Virginia Freedom of Information Act.

Consistent with § 2.2-4342(F) of the Code of Virginia, DMAS will, as permitted by law, hold confidential Suppliers trade secrets or proprietary information submitted by a Supplier in connection with a

procurement transaction or prequalification application submitted pursuant to subsection B of §2.2-4317 if the Supplier, to DMAS's satisfaction:

i). invokes the protections of section 2.2-4342(F) of the Code of Virginia in writing prior to or upon submission of the data or other materials,

ii). identifies specifically the data or other materials to be protected, and

iii). states the reasons why protection is necessary.

FAILURE TO COMPLY WILL RESULT IN THE DATA OR OTHER MATERIALS BEING RELEASED TO SUPPLIERS OR THE PUBLIC AS PROVIDED FOR IN THE VIRGINIA FREEDOM OF INFORMATION ACT.

The Supplier should submit a completed Administrative Appendix F (Proprietary/Confidential Information Identification Form) with its proposal that lists all pages in the Supplier's proposal that contain proprietary information and the reason it deems such information proprietary. **The classification of an entire proposal as proprietary or trade secret is not acceptable**.

Also refer to Section 9.b.2 for additional information regarding proposal format, including the location for Contractor's completed Appendix F and instructions on how to provide a redacted copy of the proposal.

9.a.11. PROPOSAL PROTOCOL

Protocol for the format and submission of the Contractor's Proposal is detailed in RFP Section 9.b, Proposal Format.

9.a.12. SINGLE POINT OF CONTACT

Submit all inquiries concerning this RFP in writing by email, subject: "Questions for RFP #2016-05" to:

SPOC: Chris Banaszak

Email: RFP2016-05@dmas.virginia.gov

DMAS cannot guarantee a response to questions received less than fifteen (15) days prior to the proposal due date. No questions will be addressed orally.

To ensure timely and adequate consideration of proposals, **Contractors are to limit all contact**, whether verbal or written, pertaining to this RFP to the designated SPOC for the duration of this proposal process.

9.a.13. PRE-PROPOSAL CONFERENCE/TELECONFERENCE

An optional pre-proposal conference/teleconference will be conducted at 1:00 P.M. ET on June 28, 2016 at the DMAS 7th Floor Conference Room, 600 E. Broad Street, Richmond, VA 23219. The purpose of this conference is to give DMAS an opportunity to clarify any facets of this solicitation. DMAS will not respond to questions during the pre-proposal conference.

To participate in the pre-proposal conference/teleconference, Offerors need to register with the SPOC: Chris Banaszak by sending an e-mail to RFP2016-05@dmas.virginia.gov stating the name of Offeror and Offerors participating representatives. Due to space limitations, Offerors who will be attending the conference in person are limited to three (3) representatives. Offerors for electronic attendance will receive a teleconference number for the call. It is strongly recommended that Offerors register no later than 1:00 pm local time on the day prior to the teleconference to ensure that Offeror receives a teleconference number.

9.a.14. EVALUATION PROCESS

DMAS will review each proposal received by the due date and time to determine whether it meets the Must Have ("M") factors of this RFP. All Must Have factors included in Section 9.a.15, Evaluation Factors, are evaluated on a met or not-met basis. Any proposal that does not meet all of the Must Have factors will be set aside and receive no further consideration.

The proposals that meet all the Must Have criteria will be distributed to the evaluation team who will assess and score each Contractor's response to RFP Section 3, Scope of Work, Section 6, Contractor Profile and Key Personnel, Section 8, Contract Standards, and Section 9.c, Small Business (SWaM) Procurement Plan, based on a review of the submitted materials.

DMAS may elect to continue the evaluation of the most qualified proposal(s) and may request that the Contractor(s) clarify or further explain certain aspects of the proposal(s).

At any point in the evaluation process, DMAS may employ any or all of the following means of evaluation:

- Reviewing industry research
- Requesting contractor presentations
- Conducting site visits
- Reviewing Contractor's status as a small business or micro business, including small or micro businesses that are owned by minorities, women, or disabled veterans, and certified by the Department of Small Business and Supplier Diversity (SBSD)
- Considering Contractor's planned subcontract value with certified SWaM or micro business subcontractors
- Contacting Contractor's references and customers
- Product demonstrations/pilot tests/detailed demonstrations
- Review of pricing
- Interviewing key personnel and/or contacting key personnel references
- Requesting Contractors to elaborate on or clarify specific portions of their proposal

DMAS may limit all of the above to the most qualified proposals. No Contractor is guaranteed an opportunity to explain, supplement, or amend its initial proposal. **Contractors shall submit their best proposals and not assume there will be an opportunity to negotiate, amend, or clarify any aspect of their initial submitted proposals.** Therefore, each Contractor is encouraged to ensure that its initial proposal contains and represents its best offering.

Contractor shall be prepared to conduct product demonstrations, pilot tests, presentations, or site visits at the time, date, and location of DMAS' choice, shall DMAS so request.

DMAS will select for negotiation those proposals deemed to be fully qualified and best suited based on the factors as stated in the RFP. Negotiations will be conducted with these Contractors. After negotiations, DMAS may select the proposal(s) which, in its opinion, is the best proposal(s) representing best value and may award a contract to that Contractor(s). For purposes of this RFP, DMAS will determine best value based on the value relative to the cost of the Solution, giving consideration to the project's budget objectives.

If any Contractor fails to provide the necessary information for negotiations in a timely manner, or fails to negotiate in good faith, DMAS may terminate negotiations with that Contractor at any time.

DMAS SHALL NOT BE CONTRACTUALLY BOUND TO ANY CONTRACTOR PRIOR TO THE EXECUTION OF A DEFINITIVE WRITTEN CONTRACT.

9.a.15. EVALUATION FACTORS

The evaluation factors involved in this RFP are as follows:

1. Must Have (M) factors identified in the table below:

Table 11: Must Have Factors

No.	Must Have (M) Factors
1	(M) Proposal must be received by the due date and time. No late proposals will be reviewed.
2	(M) Contractor affirms that its organization and all affiliates are current with all sales tax obligations to Virginia as of the due date of the proposals in response to this RFP.
3	(M) Contractor accepts the statutorily provisions at the following URLs: http://www.vita.virginia.gov/uploadedFiles/SCM/StatutorilyMandatedTsandCs.pdf; and the eVA provisions at: http://www.vita.virginia.gov/uploadedFiles/SCM/eVATsandCs.pdf as well as the contractual claims provision §2.2-4363 of the Code of Virginia.
4	(M) Contractor acknowledges by submitting a proposal in response to this solicitation that it is ineligible to submit a proposal in response to the Integrated Services Solutions procurement released by the Department of Medical Assistance Services.

2. The extent to which the Contractor's proposal satisfies the requirements identified in Section 3, Scope of Work, and Section 8, Contract Standards.
3. Contractor's viability and past performance (see Section 6, Contractor Profile and Key Personnel), which will include Contractor's diligence and thoroughness in following and completing the requirements of this solicitation.

4. Contractor's status as a SBSD-certified small business or micro business, including small businesses or micro businesses that are owned by minorities or women, and Contractor's proposed Small Business (SWaM) Procurement Plan (see Section 9.c, Small Business (SWaM) Procurement Plan).
5. Cost, which may include submitted price, negotiated price, discounted price, total cost of ownership, etc.

9.a.16. Procurement Website

Virginia's procurement portal, http://www.eva.virginia.gov, provides information about State solicitations and awards. Contractors are encouraged to check this site on a regular basis and, in particular, prior to submission of proposals to identify any amendments to the RFP that may have been issued.

The Department of Medical Assistance Services Procurement Library for this RFP, http://www.dmas.virginia.gov/Content_pgs/mmis_replacement_lib.aspx, provides reference materials to assist in the response to the RFP.

9.a.17. Timetable

The following provides the timeline for this procurement.

Table 12: Procurement Timeline

Activity	Target Completion Date
RFP posted to eVA	06/15/2016
Registration deadline for pre-proposal conference/teleconference	06/27/2016 by 1:00 P.M. ET
Contractor pre-proposal conference/teleconference	06/28/2016 at 1:00 P.M. ET
Deadline for all questions	07/8/2016 by 10:00 A.M. ET
Proposals due	07/29/2016 by 10:00 A.M. ET
Presentations and site visits (should DMAS elect)	TBD
Contract(s) awarded	TBD

The timetable above is provided for planning purposes only.

9.a.18. eVA Registration Required

By the date of award, the selected Contractor(s) is required to be registered and able to accept orders through eVA. If a Contractor is not registered with eVA, select the "Supplier" tab at the following website, http://www.eva.virginia.gov, for registration instructions and assistance.

9.a.19. Excluded Parties List

Your organization, all affiliates and all subcontractors may not be awarded a contract if they are excluded on the Federal government's System for Award Management (SAM) at www.sam.gov or the Virginia's Debarment List as provided by Code of Virginia §2.2-4321 at the time of award.

9.a.20. Best and Final Offer

At the conclusion of negotiations, the Contractor(s) may be asked to submit in writing, a Best and Final Offer (BAFO). After the BAFO is submitted, no further negotiations shall be conducted with the Contractors(s). The Contractor's proposal will be rescored to combine and include the information contained in the BAFO. The decision to award will be based on the final evaluation including the BAFO.

9.b. Proposal Format

In its proposal, the Contractor shall adhere to the specific format set forth below in Sections 9.b.1 and 9.b.2 to aid the evaluation team in its efforts to evaluate all proposals fairly and equitably. Proposals that deviate from the requested format will require additional time for review and evaluation. DMAS may reject any proposal that is not in the required format, or does not address all the requirements of this RFP. Contractor shall be prepared to incorporate all statements made in its proposal in response to this RFP into the final contract.

Proposals shall be written specifically to answer this RFP. General "sales" material shall not be used within the body of the proposal and any additional terms or conditions on the "sales" material will be considered invalid. If desired, Contractor may attach such material in a separate appendix. It is essential that the proposal be thorough and concise. Contractor shall avoid broad, unenforceable, or immeasurable responses, and shall include all requested information in each section as indicated below.

9.b.1. Contractor's Proposal Submission Format

Due Date

In order to be considered for selection, the Contractor must submit a complete response to this RFP that is received no later than 10:00 A.M. ET on Friday, July 29, 2016.

Submission Location

Proposals sent by USPS, UPS, FedEx, or other commercial carrier shall be addressed to:

Attention: Chris Banaszak
Department of Medical Assistance Services
600 East Broad Street, Suite 1300
Richmond, VA 23219

Proposals submitted by Hand Delivery shall be addressed to:

Attention: Chris Banaszak
Department of Medical Assistance Services, 7th Floor DMAS Receptionist
600 East Broad Street
Richmond, VA 23219

PACKAGE LABELING

Proposals shall be clearly marked on the outside cover of all boxes, packages, envelopes, etc. with the following:

Contractor Name
Enterprise Data Warehouse Solution RFP No. 2016-05
Proposal Due: July 29, 2016 at 10:00 A.M. ET
Attention: Chris Banaszak
Department of Medical Assistance Services
600 East Broad Street
Richmond, VA 23219

PROPOSAL VOLUMES

The Contractor's complete response to the RFP shall consist of the following three (3) proposal volumes. **Detailed instructions for what must be included in each volume** are provided below in Section 9.b.2, Contractor's Proposal Format.

- Volume 1 – Technical Proposal
- Volume 2 – Cost Proposal
- Volume 3 – Redacted Proposal

PROPOSAL VOLUMES SUBMISSION FORMAT

The three (3) proposal volumes **shall each be submitted in a separate, sealed envelope** according to the following instructions. Each Volume shall be signed by an authorized representative of the Contractor.

- **Volume 1 – Technical Proposal**
  - ✓ Two (2) original, signed hard copies in a binder with tabs delineating each major section
  - ✓ Six (6) electronic copies on CD-ROMs in a Microsoft Word file format (file naming conventions are defined below in RFP Section 9.b.2)
- **Volume 2 – Cost Proposal**
  - ✓ Two (2) original, signed hard copies in a binder with tabs delineating the Pricing section and the SWaM Procurement Plan
  - ✓ One (1) electronic copy on a CD-ROM in a Microsoft Excel file format, as provided in RFP Appendix C and in the Procurement Library (file naming conventions are defined below in RFP Section 9.b.2)
- **Volume 3 – Redacted Proposal**
  - ✓ Two (2) original, signed hard copies in a binder with tabs delineating each major section
  - ✓ One (1) electronic copy on a CD-ROM in Adobe PDF file format (file naming conventions are defined below in RFP Section 9.b.2)

9.b.2. CONTRACTOR'S PROPOSAL FORMAT

In order to provide optimal readability and efficient evaluation of proposals, Contractors shall organize their response to this RFP as indicated below, addressing each requirement in the sequence provided.

For the electronic copies of each Volume, Contractors shall provide the requested information in the following format:

- Contractor shall place its name in each file name (e.g., ABC Company – Enterprise Data Warehouse Solution RFP No. 2016-05 – Transmittal.docx)

9.b.2.1. VOLUME 1 – TECHNICAL PROPOSAL

Contractor shall provide the following documents both in hard copy and as separate electronic files, per the instructions above in Section 9.b.1, Contractor's Proposal Submission Format.

For ease of formatting Contractor's response, the following pages provide the required outline for Volume 1 – Technical Proposal. Contractor's responses shall follow both the numbering and naming conventions of this outline.

FILE 1: TRANSMITTAL LETTER

1. **Transmittal Letter**: Contractor shall provide a transmittal letter, signed by an individual authorized to legally bind the Contractor to the terms and conditions of this RFP and identifying the individuals authorized to negotiate on behalf of the Contractor. This letter shall also include contact information for these individual(s).
2. **eVA Registration Confirmation**: Contractor shall provide a copy of Contractor's completed eVA registration confirmation.

FILE 2: EXECUTIVE SUMMARY

1. **Executive Summary**: Contractor shall provide a high level summary of the most important aspects of the proposal, containing a concise description of the proposed solution(s).

FILE 3: SCOPE OF WORK

Contractor shall address each item in RFP Section 3, Scope of Work, in the order provided below.

1. **Contractor General Requirements:** Contractor shall provide a detailed response to each section in RFP Section 3.a., Contractor General Requirements, using the heading titles provided below.
   - 1.1. Project Design, Development, and Implementation (DDI)
   - 1.2. Testing Overview
   - 1.3. Change Management
   - 1.4. IV&V/CMS Reviews and Certification
   - 1.5. Audit Support
   - 1.6. Turnover
   - 1.7. Technology

1.8. Electronic Data Interchange

1.9. Documentation Management

1.10. Enterprise Data Warehouse Solution

1.11. Conversion

2. **Statement of Work – Enterprise Data Warehouse Solution:** Contractor shall provide a detailed response to each of the following sections of RFP Section 3.b., Statement of Work – Enterprise Data Warehouse Solution, using the heading titles provided below.

2.1. Release Scoping

2.2. Business Requirements

2.3. Security Requirements

2.4. Reporting Requirements

2.5. Functional Requirements

2.6. Non-Functional Requirements

2.7. Service Requirements

2.8. Service-Level Agreements (SLAs) and Performance Standards

FILE 4: CONTRACTOR PROFILE AND KEY PERSONNEL

Contractor shall address each item in RFP Section 6, Contractor Profile and Key Personnel, in the order provided below.

1. **Contractor Proposal Compliance**: Contractor shall provide an affirmative statement in response to RFP Section 6.a., Contractor Proposal Compliance.
2. **Contractor Corporate Overview**: Contractor shall provide a response to each of the following sections of RFP Section 6.b., Contractor Corporate Overview, using the heading titles provided below.

2.1. Business

2.2. Corporate Identity

2.3. Organization and Structure

2.4. Locations

2.5. Strategic Relationships

2.6. ISO 900X Certification

2.7. Council for Affordable Quality Healthcare Certification

3. **Financial Information**: Contractor shall provide a response to each of the following sections of RFP Section 6.c., Financial Information, using the heading titles provided below.

3.1. Total Annual Revenue

3.2. Dun and Bradstreet Supplier Qualifier Report

3.3. Annual Reports

4. **Future, Long Term Vision, and Strategic Plans**: Contractor shall provide a response to RFP Section 6.d., Future, Long Term Vision, and Strategic Plans.
5. **Contractor Experience Level and Customer References**: Contractor shall provide three (3) customer references in the format provided in RFP Section 6.e, Contractor Experience Level and Customer References.
6. **Support Management and Personnel**: Contractor shall provide a detailed response to each of the following sections of RFP Section 6.f., Support Management and Personnel, using the heading titles provided below.

   6.1. Steering Committee

   6.2. Project Team

   6.3. Contractor Personnel

FILE 5: CONTRACT TERMS AND CONDITIONS AND SERVICE-LEVEL AGREEMENTS

Contractor shall address each item in RFP Section 8, Contract Standards, RFP Appendix A – Service-Level Agreements, and RFP Section H – Contract Template, in the order provided below.

1. **Contract Standards**: Contractor shall complete the table provided in RFP Section 8, Contract Standards. If a Contractor's proposed Solution requires DMAS to execute an EULA, Contractor shall contact the Single Point of Contact (SPOC), who will provide Contractor with DMAS' License Agreement Addendum terms.
2. **Service-Level Agreements**: Contractor shall include the full text of RFP Appendix A – Service-Level Agreements, in this section and provide a statement of affirmation and agreement to be bound by the SLAs contained therein.
3. **Contract Template**: Contractor shall provide the full text of RFP Appendix H – Contract Template, in this section. Contractor shall include comments and, if necessary, specific alternative language utilizing tracked changes for discussion during contract negotiations.

FILE 6: APPENDICES

Contractor shall include the following appendices in the order provided below.

1. Appendix D – State Corporation Commission form
2. Appendix E – Certificate of Compliance with Prohibition of Political Contributions
3. Appendix F – Proprietary/Confidential Information Identification Form
4. Appendix G – Offeror Certification
5. Initial Master Work Plan as requested in Section 5, Project Management and Governance
6. Completed Microsoft Excel Requirements Traceability Matrix (RTM), provided in the Procurement Library, as referenced in Appendix J
7. Any optional information Contractor may wish to submit, not including pricing data

9.b.2.2. VOLUME 2 – COST PROPOSAL

In a separately sealed envelope, Contractor shall provide the following files, per the instructions above in Section 9.b.2, Contractor's Proposal Submission Format.

For ease of formatting Contractor's response, the following pages provide the required outline for Volume 2 – Cost Proposal. Contractor's responses shall follow both the numbering and naming conventions of this outline.

FILE 1: PRICING

Contractor shall provide a completed Pricing Submittal Workbook according to the instructions laid forth in RFP Section 4, Pricing Information. The Pricing Submittal Workbook is included in RFP Appendix C and on the Procurement Library in its native Microsoft Excel format.

FILE 2: SMALL BUSINESS (SWAM) PROCUREMENT PLAN

Contractor shall provide a completed SWaM Procurement Plan, which is included in RFP Appendix B, according to the instructions laid forth in RFP Section 9.c, Small Business (SWaM) Procurement Plan.

9.b.2.3. VOLUME 3 – REDACTED PROPOSAL

Contracted shall provide a complete redacted copy of the Technical Proposal and /or Cost Proposal, as applicable, in accordance with RFP Section 9.a.10, Proprietary Information, and the outlines laid forth in RFP Sections 9.b.2.1 and 9.b.2.2.

9.c. SMALL BUSINESS (SWAM) PROCUREMENT PLAN

It is the policy of Virginia to contribute to the establishment, preservation, and strengthening of small businesses and micro businesses including those small or micro businesses owned by women, minorities or service-disabled veterans and to encourage their participation in State procurement activities. Virginia encourages all Contractors (Suppliers) to provide for the participation of these small businesses through partnerships, joint ventures, subcontracts, and other contractual opportunities.

A Contractor which is a small business, a small woman-owned business, a small minority-owned business or a small service disabled veteran-owned business, as defined in § 2.2-4310 or 2.2-1401 of the Code of Virginia, or a certified micro business as defined in Executive Order Number 20 (2014), is a SWaM business. If Contractor is a SWaM business, the Contractor shall include a copy of all Virginia SWaM certifications with its proposal. No Contractor shall be considered a small business, a woman-owned business, a minority-owned business, a service-disabled veteran business or a micro business unless certified by SBSD. For information, go to: http://www.sbsd.virginia.gov/.

Please provide a Small Business (SWaM) Procurement Plan as set forth in Appendix B – SWaM Procurement and Subcontracting Monthly Report and Small Business (SWaM) Procurement Plan of this RFP. In the submitted Small Business (SWaM) Procurement Plan, please state the percentage of the contract's value that will be spent with SWaM subcontractors. Please also include in your plan a list of all subcontractors you plan to utilize who are not Virginia-certified SWaM businesses. If Contractor does not plan to use small business subcontractors in executing a contract resulting from this RFP, so state. Appendix B shall be included within Volume 2 – Cost Proposal as indicated in RFP Section 9.b.2.2.

APPENDIX A – SERVICE-LEVEL AGREEMENTS

INTRODUCTION TO SERVICE-LEVEL AGREEMENTS

A successfully implemented service-level management disciple ensures that information system functions efficiently while fulfilling the desired business needs. SLAs relate to operational requirements including data quality thresholds to increase efficiency, enhance customer service, and control costs. Additionally, SLAs measure system performance through availability, accessibility, performance, and response times. SLAs also support business continuity response times (disaster recovery), problem management and resolution response times (preventative measurements and minimizing impacts of incidents).

ENTERPRISE DATA WAREHOUSE SOLUTION SERVICE-LEVEL AGREEMENTS

Over the life of the contract, it is the Contractor's responsibility to develop the measurement tool and manage the following processes and SLAs defined in Table 13 below, to meet the performance management objectives for the EDWS.

The remedy amounts defined in Table 13 reflect the relative importance and value of the SLAs to DMAS.

Table 13: EDWS Service-level Agreements

ID	Description	Measurement	Remedy
EDWS-SLA-01	Potential velocity – 24 hours from entry to data mart usage Data warehouse velocity refers to the speed at which data moves through the business intelligence/data warehouse environment, from the initial entry into the operational environment, through ETL (extract, transform and load) and into the data warehouse, and finally to the data mart environment.	< 24 hours from transformation, cleansing, aggregations, and load to EDW	1% of annual contract value If > 26 hours additional .5%/hour of annual contract value
EDWS-SLA-02	The response time and performance must not exceed specified time frame based on the category of the service. Response time – 95% of all queries will be executed in less than 1 minute.	Contractor measurement for on-line response time and agreed upon by the Department.	Category 1 : > 5% of queries executed > 1 minute 1% of monthly contract value Category 2 : >5% of queries executed > 5 minutes Additional .5% of monthly contract value Category 3 : > 5% of queries executed

ID	Description	Measurement	Remedy
			> 10 minutes Additional .5% of monthly contract value
EDWS-SLA-03	Must pass the Department's quality audits.	Published	Any audit remedies incurred by the State
EDWS-SLA-04	The System reports must be kept online for 2 years.	Reports defined and mutually agreed upon during requirements.	1% of monthly contract value
EDWS-SLA-05	The Log data must be kept online for 90 days.	Logs defined and mutually agreed upon during requirements.	1% of monthly contract value
EDWS-SLA-06	The Log data must be kept in the archive for 3 years.	Logs defined and mutually agreed upon during requirements.	1% of monthly contract value
EDWS-SLA-07	The archive log data must be provided within 3 business days from date of the request.	Logs defined and mutually agreed upon during requirements.	1% of monthly contract value
EDWS-SLA-08	Prioritize all issues into severity levels as defined by DMAS and resolve them according to the established timeframes for the production system with the defined metrics.	Severity Level One (1) Defects – within 60 minutes Severity Level Two (2) Defects – within 4 hours Severity Level Three (3) Defects – within 8 hours Severity Level Four (4) or higher – within an agreed upon schedule between the Contractor(s) and the Department after the defect was identified.	1% of Monthly contract value/minute > 59 mins 1% of Monthly contract value/minute > 3 hrs. 59 mins 1% of Monthly contract value /minute > 7 hrs. 59 minutes 1% of Monthly contract value /minute > agreed upon schedule
EDWS-SLA-09	On the occurrence of a disaster, the Contractor will restore essential services irrespective of the time the incident occurred	< 120 clock minutes	2% of annual contract value
EDWS-SLA-10	Recovery Time Objective (RTO) On the occurrence of a disaster, the Contractor will restore essential services irrespective of the time the incident occurred	> two (2) calendar weeks	2% of monthly contract value
EDWS-SLA-11	A comprehensive technical and operational test of the Disaster Recovery (DR) Plan and Business Continuity Plan	Failure to pass the annual test in a contract year	2% of annual contract value

ID	Description	Measurement	Remedy
EDWS-SLA-12	Website response times Website response time is measured at the Contractor's router	> two (2) seconds ninety-nine percent (99%) of the time	1% of monthly contract value
EDWS-SLA-13	Sampling of key performance metrics	> every 60 seconds	1% of monthly contract value
EDWS-SLA-14	Online dashboard /services for the real-time and historical operational performance metrics	< 99% availability (except for the scheduled maintenance window)	2% of monthly contract value
EDWS-SLA-15	Automated monitoring alerts	> 60 seconds	1% of monthly contract value
EDWS-SLA-16	Adhere to applicable State and Federal laws, rules, regulations, guidelines, policies, and procedures relating to information systems, information systems security and privacy, physical security, PHI confidentiality and privacy.	The Contractor will assume all liabilities including any incurred cost to the Department for the violation of applicable State and Federal laws, rules, regulations, guidelines, policies, and procedures relating to information systems, information systems security and privacy, physical security, PHI confidentiality and privacy.	Incurred costs
EDWS-SLA-17	EDWS availability Scheduled maintenance shall not prevent transactions getting processed (High availability).	< twenty-four (24) hours per day, seven (7) days per week	1% of monthly contract value
EDWS-SLA-18	Availability of the test regions during scheduled times	< 99.9%	1% of monthly contract value

APPENDIX B – SWAM PROCUREMENT AND SUBCONTRACTING MONTHLY REPORT AND SMALL BUSINESS (SWAM) PROCUREMENT PLAN

A. SMALL, WOMEN-OWNED, AND MINORITY-OWNED BUSINESS (SWAM) PROCUREMENT AND SUBCONTRACTING QUARTERLY REPORT

On a quarterly basis, Contractor shall submit to DMAS evidence of compliance (subject only to insubstantial shortfalls and to shortfalls arising from subcontractor default) with the small business subcontracting plan. Upon completion of the contract, the Contractor agrees to furnish the purchasing office at a minimum the following information: name of firm with the SBSD certification number, phone number, total dollar amount subcontracted, category type (small, women-owned, or minority-owned), and type of product or service provided. Payment(s) may be withheld until compliance with the plan is received and confirmed by the agency or institution. The agency or institution reserves the right to pursue other appropriate remedies for non-compliance to include, but not be limited to, termination for default.

Contractor's quarterly report shall include spend on all Contractor's contracts with second-tier small business Contractor s which provide products or Service/Solution under this Contract. The report shall specify the amount of such spend provided to SWaM vendors, by SWaM category, regardless of such SWaM vendors' certification status. Contractor shall submit the report to BCM@dmas.virginia.gov.

B. SWAM PROCUREMENT PLAN

All small businesses must be certified by the Virginia Department of Small Business and Supplier Diversity (SBSD) by the due date for receipt of bids Certification applications are available through SBSD online at http://www.sbsd.virginia.gov/.

Offeror Name: _____

Preparer Name: _____ Date: _____

INSTRUCTIONS

A. If you are certified by the SBSD as a small business or as a micro business, complete only Section A of this form. This shall not exclude SBSD-certified women, minority or service-disabled veterans-owned businesses when they have received SBSD small business certification.

B. If you are not a SBSD-certified small business, complete Section B of this form.

SECTION A

If your firm is certified by the SBSD are you certified as a (check all that apply):

_____ Small Business

_____ Small and Women-owned Business

_____ Small and Minority-owned Business

_____ Small Service Disabled Veteran-owned Business

_____ Small Service Disabled Veteran-owned Business

_____ Micro Business

_____ Micro Business and Women-owned Business

_____ Micro Business and Minority-owned Business

_____ Micro Service Disabled Veteran-owned Business

Certification Number: _____

Certification Date: _____

SECTION B

Populate the table below to show your firm's plans for utilization of SBSD-certified small businesses in the performance of this contract. This shall not exclude SBSD-certified micro businesses or women, minority, or service disabled veteran-owned businesses when they have received the SBSD small business certification. Include plans to utilize small businesses as part of joint ventures, partnerships, subcontractors, etc.

Small Business Name & Address DMBE Certificate #	Status if Small Business is also: Women (W), Minority (M) Service-Disabled Veteran (D), Micro Business (MB)	Contact Person, Telephone & Email	Type of Goods and/or Services	Planned Involvement During Initial Period of the Contract	Planned Contract Dollars During Initial Period of the Contract
Totals $					

APPENDIX C – PRICING

C.1 PRICE PROPOSALS

This section provides the instructions for the Price Proposal preparation. Use of the Microsoft Excel spreadsheet titled "Appendix C – Pricing Schedules.xls" in the form and content provided with this RFP is **MANDATORY**. Failure to use the schedules as provided shall result in disqualification. It is included as an attachment to this RFP in the Procurement Library.

OVERVIEW

The Contract Term is defined in stages. A Design, Development and Implementation (DDI) Phase is initiated for each project. The DDI Phase I will start from contract signing date through the end of the state fiscal year. A total of eight (8) Operations and Maintenance Phases (five fixed and three optional) that begin on July 1 and end June 30, for each state fiscal year will make up the additional stages. Please see the Pricing Stage Chart for periods by RFPs. DMAS, in its sole discretion, may extend this Contract with up to three (3) one-year option periods that would run from July 1 through June 30 for each period. The prices included in the Price Proposal will become the sole basis for Contractor reimbursement, except for authorized direct cost items identified in Price Schedule K – Configuration and Customization. The dollar values included in the Offeror's Price Proposal become the basis for determining best value as described in RFP Section 9.a.14, Evaluation Process.

PRICING SCHEDULE A – DESIGN, DEVELOPMENT, AND IMPLEMENTATION (DDI) PHASE PRICE INSTRUCTIONS

The Design, Development and Implementation (DDI) Pricing Schedule for this solution is based on a "Flight Plan" concept and includes all planning, joint application design sessions, design conversion, construction, testing, implementation, and certification pricing. The DDI for services will be costed separately, totaled for complete DDI cost, and included in the Offeror's proposed Total Pricing on Pricing Schedule N.

Section 1.a.1 VIRGINIA MES PROCUREMENT STRATEGY of the RFP contains Figure 1 that is a Model of a proposed Flight Plan for a staggered implementation to support the pricing methodology.

PRICING SCHEDULES B-I, OPERATION AND MAINTENANCE (O&M) PHASE PRICE INSTRUCTIONS

The Schedules used in this section include Schedule B – Ongoing Operations and Maintenance for State FY 2018-19 through Schedule I - Ongoing Operations and Maintenance for State FY 2025-26.

In Pricing Schedules B thru F, Offerors must specify a fixed price to operate the proposed solution for each year of the initial five year base period of the contract Operational and Maintenance Phase. Pricing Schedules G thru I specify the fixed price to operate the proposed solution for each of the three (3) one year optional extensions. The Contractor awarded a contract will be paid the monthly amount as determined in final negotiations.

PRICING SCHEDULE J – OPTIONAL ENHANCEMENTS

This schedule is to allow the Offeror to account for optional enhancements not requested or included in the mandatory RFP requirements that are included in the Offeror base price (no additional cost) as well as Offeror proposed enhancements and their associated prices that are not included in the base price.

Optional enhancements will not be included in the initial scoring but may be discussed during negotiations.

PRICING SCHEDULE K – CONFIGURATION AND CUSTOMIZATION

This schedule will include pricing for the Offeror to account for requests that are either included in the base price or are priced as an option for system configuration and customization.

PRICING SCHEDULE L – LICENSES

The Pricing sheets will also include a License Pricing Sheet. This sheet will be used by the Offeror to account for licenses used during all periods of DDI and O&M.

PRICING SCHEDULE M – SUPPLEMENTAL STAFFING PRICE

This Schedule is for the Offeror to submit the fixed hourly rates for each labor category utilized and calculated into the fixed monthly payments line item for ongoing operations and maintenance for Schedules B-I. All cost associated with this Schedule is for informational purposes only but may be used during the performance of the contract to calculate Offeror reimbursement rates for other projects identified and approved by the Department.

PRICING SCHEDULE N – SUMMARY OF ALL PRICING SCHEDULES

This schedule is a summary pricing worksheet for Offerors to include the proposed prices from the DDI and O&M pricing schedules. The final negotiated price will be used for determining best value relative to the evaluation process as described in the RFP and the basis for which the awarded Contractor will be paid in the performance of the contract.

PROPOSAL QUALITY MANAGEMENT PAYMENT CALCULATION EXAMPLE

This example is a worksheet for Offerors to calculate the Quality Management Payment for each DDI stage of the project. The quality management payment calculation (7%) is a holdback. It will be paid yearly if the milestones for the DDI Fiscal Year are current. If not, then the payment will be paid when the milestones become current. If a contractor finishes all scheduled milestones ahead of the schedule fiscal year end, it will trigger the payment regardless if the 12 months are complete or not. A second Quality Management Payment is tied to CMS Certification. The quality maintenance payment calculation for CMS certification (3%) is a holdback and will be paid after CMS certification is received. See Table C-2 below.

ACTUAL VERSUS PROPOSAL PAYMENT CALCULATION FOR DDI

The payments are listed as monthly payments for pricing purposes and comparisons for DDI. In practice, Virginia and the contractor will agree upon a milestone / deliverable schedule. Based on the identified milestones or deliverables, an approval will result in a payment portion of the overall Fiscal Year payment. See the Payment Table C-3 below.

CONTRACT STAGE PRICING

The contract will be broken into stages tied to the state fiscal year. Stages will consist of DDI or Operations & Maintenance.

Table C-1: Contract Stage Pricing Table

Contract Stage	Period	RFPs
1) DDI Phase I	July 1, 2016 – June 30, 2017	PBMS, ISS, EDWS, FMS, CSS
2) DDI Phase II	July 1, 2017 – June 30, 2018	ISS, EDWS, FMS, CSS
3) O&M SFY -1	July 1, 2018 – June 30, 2019	Full O&M All RFPs
4) O&M SFY -2	July 1, 2019 – June 30, 2020	Full O&M All RFPs
5) O&M SFY -3	July 1, 2020 – June 30, 2021	Full O&M All RFPs
6) O&M SFY -4	July 1, 2021 – June 30, 2022	Full O&M All RFPs
7) O&M SFY -5	July 1, 2022 – June 30, 2023	Full O&M All RFPs
8) O&M SFY -6 (Optional)	July 1, 2023 – June 30, 2024	Full O&M All RFPs
9) O&M SFY -7 (Optional)	July 1, 2024 – June 30, 2025	Full O&M All RFPs
10) O&M SFY -8 (Optional)	July 1, 2025 – June 30, 2026	Full O&M All RFPs

Proposal Quality Management Payment Calculation Example

This example is a worksheet for Offerors to calculate the Quality Management Payment for the DDI stage of the project.

Table C-2: Quality Maintenance Payment Example

Contract Stage	A License Price	B Total Stage Price	C DDI Quality Maintenance Payment (=B x 7%)	D Total Stage Payments =(B-A-C)	E Quality Maintenance Payment for CMS Certification DDI Project Phase(s) (=B times 3%)	F Adjusted Stage Price in Pricing Schedule (=B - E)
DDI SFY1 (7%)	$10K	$2M	$140K	$1.85M	$60K	$1.94M
DDI SFY2 (7%)	$10K	$4M	$280K	3.71M	$120K	$3.88M
O&M Years 1-8	$700K	$48M	NA	$47.3M	NA	$48M
Total Price	$720K	$54M	$420K	$52.88M	$180K	$53.82M

Step 1: Offerors estimate Licenses Price for the Contract Stage based on their proposal and internal pricing processes.

Step 2: Offerors estimate Total Stage Price for the Contract Stage based on their proposal and internal pricing processes.

Step 3: Offerors calculate the Quality Maintenance Payment Amount for the DDI Contract Stage using the formula: Total Stage Price x 7%.

Step 4: Offerors calculate the Quality Maintenance Payment Amount for the CMS Certification using the formula: Total Stage Price x 3%. This hold back is paid when CMS certification is completed.

Step 5: Offerors calculate Proposal Fixed Monthly Payments using the formula: Total Stage Price – Quality Maintenance Payment Amount – Licenses Price.

Actual Versus Proposal Payment Calculation Example

If the 12 monthly payments equal $800,000, then $800,000 minus the 7% quality management hold back will be divided by the number of payment milestones and deliverables identified in the work plan (see table C-3 below). Virginia and the Contractor will agree on the final payment schedule. Once a milestone is achieved, the Contractor will submit an approval for payment.

Table C-3: Deliverable / Milestone Payment Table

Deliverable / Milestones Due in Fiscal Year	Total Payments - $800,000 Minus (7%) = $744,000	Approval Schedule
1) Baselined Work Plan	$148,800	On-time
2) Detailed Project Plan	$148,800	On-time
3) Project Planning Complete	$148,800	On-time
4) Requirements Validation	$148,800	On-time
5) Design Document	$148,800	On-time
Fiscal Year End Payment Due	$56,000	At completion of last deliverable (#5) for FY
Total	$800,000	

PRICE SCHEDULE A (A.1 – A.5) – DESIGN, DEVELOPMENT AND IMPLEMENTATION (DDI) CONTRACT STAGE 1, SFY 2016-17

The Offeror shall provide pricing, independent of the "Ongoing Operations and Maintenance"(O&M), for Design, Development and Implementation (DDI) that is specifically related to the provision of the Contract Stage 1 associated requirements indicated in the Offeror's completed response to the RFP.

A.1 The Offeror shall provide a fixed price for the complete Contract Stage that includes fixed monthly payments over the Offeror's estimated period of the Contract Stage.

A.2 A Quality Maintenance Payment equal to seven percent (7.0%) of the Total Contract price for DDI will be paid upon successful implementation for the Stage 1 period.

A.3 The Offeror shall provide the annual licenses costs.

A.4 A Quality Maintenance Payment equal to three percent (3.0%) of the Total Contract price for DDI will be paid upon successful completion of the CMS Certification Project Phase for the Stage 1 period.

A.5 The total stage price for DDI shall be transferred to Schedule N to be included in Offeror's total cost for solution.

Time Period for this Stage: July 1, 2016 to June 30, 2017

	Number of Months (N)	Price per Month (PPM)	Total Price (N*PPM)	Calculated Percent Total Price (Total Price/Total Stage Price *100)
(A.1) Fixed Monthly Payments	12	$	$	%
(A.2) Quality Maintenance Payments Price	N/A	N/A	$	7%
(A.3) Licenses Price[1]	N/A	N/A	$	%
(A.4) CMS Certification Quality Maintenance Payments Price	N/A	N/A	$	3%
(A.5) Total Stage Price (*Sum A.1 – A.4*)	N/A	N/A	$	100%

[1] License information shall also be included as a line item in Schedule L – Licenses.

PRICE SCHEDULE A (A.6- A.10) – DESIGN, DEVELOPMENT AND IMPLEMENTATION (DDI) CONTRACT STAGE 2, SFY 2017-18

The Offeror shall provide pricing, independent of the "Ongoing Operations and Maintenance"(O&M), for Design, Development and Implementation (DDI) that is specifically related to the provision of the Contract Stage 1 associated requirements indicated in the Offeror's completed response to the RFP.

A.6 The Offeror shall provide a fixed price for the complete Contract Stage that includes fixed monthly payments over the Offeror's estimated period of the Contract Stage.

A.7 A Quality Maintenance Payment equal to seven percent (7.0%) of the Total Contract price for DDI will be paid upon successful implementation for the Stage 1 period.

A.8 The Offeror shall provide the annual licenses costs.

A.9 A Quality Maintenance Payment equal to three percent (3.0%) of the Total Contract price for DDI will be paid upon successful completion of the CMS Certification Project Phase for the Stage 2 period.

A.10 The total stage price for DDI shall be transferred to Schedule N to be included in Offeror's total cost for solution.

Time Period for this Stage: July 1, 2017 to June 30, 2018

	Number of Months (N)	**Price per Month (PPM)**	**Total Price (N*PPM)**	**Calculated Percent Total Price (Total Price/Total Stage Price *100)**
(A.6) Fixed Monthly Payments	12	$	$	%
(A.7) Quality Maintenance Payments Price	N/A	N/A	$	7%
(A.8) Licenses Price[2]	N/A	N/A	$	%
(A.9) CMS Certification Quality Maintenance Payments Price	N/A	N/A	$	3%
(A.10) Total Stage Price (*Sum A.6 – A.9)*	N/A	N/A	$	100%

[2] License information shall also be included as a line item in Schedule L – Licenses.

PRICE SCHEDULE B – ONGOING OPERATIONS AND MAINTENANCE, CONTRACT STAGE SFY 2018-19

The Offeror shall provide pricing, independent of the Design, Development and Implementation Contract Stage, that is specifically related to the provision of Ongoing Operations and Maintenance (O&M) for the referenced Contract Stage State Fiscal Year (SFY) in support of the Offeror's final negotiated solution.

B.1 The Offeror shall provide a fixed price for the complete Contract Stage over the State Fiscal Year (SFY) (July 1 -June 30) that includes a fixed monthly payment.

B.2 The Offeror shall provide the annual licenses costs.

B.3 The Offeror shall provide the Configuration and Customization for 4160 hours per year.

Time Period for this Stage: July 1, 2018 – June 30, 2019

	Number of Months (N)	**Price per Month (PPM)**	**Total Price (N*PPM)**	**Calculated Percent Total Price (Total Price/Total Stage Price *100)**
(B.1) Fixed Monthly Payments	12	$	$	%
(B.2) Licenses Price[3]	N/A	N/A	$	%
(B.3) Configuration/ Customization Price[4]	N/A	N/A	$	%
(B.4) Total Stage Price *(Sum B.1 – B.3)*	N/A	N/A	$	100%

[3] License information shall also be included as a line item in Pricing Schedule L – Licenses.
[4] Total amount from Schedule K - Configuration and Customization, shall be transferred for this line item.

PRICE SCHEDULE C – ONGOING OPERATIONS AND MAINTENANCE, CONTRACT STAGE SFY 2019-20

The Offeror shall provide pricing, independent of the Design, Development and Implementation Contract Stage, that is specifically related to the provision of Ongoing Operations and Maintenance (O&M) for the referenced Contract Stage State Fiscal Year (SFY) in support of the Offeror's final negotiated solution.

C.1 The Offeror shall provide a fixed price for the complete Contract Stage over the State Fiscal Year (SFY) (July 1 -June 30) that includes a fixed monthly payment.

C.2 The Offeror shall provide the annual licenses costs.

C.3 The Offeror shall provide the Configuration and Customization for 4160 hours per year.

Time Period for this Stage: July 1, 2019 – June 30, 2020

	Number of Months (N)	**Price per Month (PPM)**	**Total Price (N*PPM)**	**Calculated Percent Total Price (Total Price/Total Stage Price *100)**
(C.1) Fixed Monthly Payments	12	$	$	%
(C.2) Licenses Price[5]	N/A	N/A	$	%
(C.3) Configuration/ Customization Price[6]	N/A	N/A	$	%
(C.4) Total Stage Price *(Sum C.1 – C.3)*	N/A	N/A	$	100%

[5] License information shall also be included as a line item in Pricing Schedule L – Licenses.

[6] Total amount from Schedule K - Configuration and Customization, shall be transferred for this line item.

PRICE SCHEDULE D – ONGOING OPERATIONS AND MAINTENANCE, CONTRACT STAGE SFY 2020-21

The Offeror shall provide pricing, independent of the Design, Development and Implementation Contract Stage, that is specifically related to the provision of Ongoing Operations and Maintenance (O&M) for the referenced Contract Stage State Fiscal Year (SFY) in support of the Offeror's final negotiated solution.

D.1 The Offeror shall provide a fixed price for the complete Contract Stage over the State Fiscal Year (SFY) (July 1 -June 30) that includes a fixed monthly payment.

D.2 The Offeror shall provide the annual licenses costs.

D.3 The Offeror shall provide the Configuration and Customization for 4160 hours per year.

Time Period for this Stage: July 1, 2020 – June 30, 2021

	Number of Months (N)	**Price per Month (PPM)**	**Total Price (N*PPM)**	**Calculated Percent Total Price (Total Price/Total Stage Price *100)**
(D.1) Fixed Monthly Payments	12	$	$	%
(D.2) Licenses Price[7]	N/A	N/A	$	%
(D.3) Configuration/ Customization Price[8]	N/A	N/A	$	%
(D.4) Total Stage Price *(Sum D.1 – D.3)*	N/A	N/A	$	100%

[7] License information shall also be included as a line item in Pricing Schedule L – Licenses.

[8] Total amount from Schedule K - Configuration and Customization, shall be transferred for this line item.

PRICE SCHEDULE E – ONGOING OPERATIONS AND MAINTENANCE, CONTRACT STAGE SFY 2021-22

The Offeror shall provide pricing, independent of the Design, Development and Implementation Contract Stage, that is specifically related to the provision of Ongoing Operations and Maintenance (O&M) for the referenced Contract Stage State Fiscal Year (SFY) in support of the Offeror's final negotiated solution.

E.1 The Offeror shall provide a fixed price for the complete Contract Stage over the State Fiscal Year (SFY) (July 1 -June 30) that includes a fixed monthly payment.

E.2 The Offeror shall provide the annual licenses costs.

E.3 The Offeror shall provide the Configuration and Customization for 4160 hours per year.

Time Period for this Stage: July 1, 2021 – June 30, 2022

	Number of Months (N)	**Price per Month (PPM)**	**Total Price (N*PPM)**	**Calculated Percent Total Price (Total Price/Total Stage Price *100)**
(E.1) Fixed Monthly Payments	12	$	$	%
(E.2) Licenses Price[9]	N/A	N/A	$	%
(E.3) Configuration/ Customization Price[10]	N/A	N/A	$	%
(E.4) Total Stage Price *(Sum E.1 – E.3)*	N/A	N/A	$	100%

[9] License information shall also be included as a line item in Pricing Schedule L – Licenses.

[10] Total amount from Schedule K - Configuration and Customization, shall be transferred for this line item.

PRICE SCHEDULE F – ONGOING OPERATIONS AND MAINTENANCE, CONTRACT STAGE SFY 2022-23

The Offeror shall provide pricing, independent of the Design, Development and Implementation Contract Stage, that is specifically related to the provision of Ongoing Operations and Maintenance (O&M) for the referenced Contract Stage State Fiscal Year (SFY) in support of the Offeror's final negotiated solution.

F.1 The Offeror shall provide a fixed price for the complete Contract Stage over the State Fiscal Year (SFY) (July 1 -June 30) that includes a fixed monthly payment.

F.2 The Offeror shall provide the annual licenses costs.

F.3 The Offeror shall provide the Configuration and Customization for 4160 hours per year.

Time Period for this Stage: July 1, 2022 – June 30, 2023

	Number of Months (N)	**Price per Month (PPM)**	**Total Price (N*PPM)**	**Calculated Percent Total Price (Total Price/Total Stage Price *100)**
(F.1) Fixed Monthly Payments	12	$	$	%
(F.2) Licenses Price[11]	N/A	N/A	$	%
(F.3) Configuration/ Customization Price[12]	N/A	N/A	$	%
(F.4) Total Stage Price *(Sum F.1 – F.3)*	N/A	N/A	$	100%

[11] License information shall also be included as a line item in Pricing Schedule L – Licenses.

[12] Total amount from Schedule K - Configuration and Customization, shall be transferred for this line item.

PRICE SCHEDULE G – ONGOING OPERATIONS AND MAINTENANCE, CONTRACT STAGE SFY 2023-24 (RENEWAL OPTION YEAR 1)

The Offeror shall provide pricing, independent of the Design, Development and Implementation Contract Stage, that is specifically related to the provision of Ongoing Operations and Maintenance (O&M) for the referenced Contract Stage State Fiscal Year (SFY) in support of the Offeror's final negotiated solution.

G.1 The Offeror shall provide a fixed price for the complete Contract Stage over the State Fiscal Year (SFY) (July 1 -June 30) that includes a fixed monthly payment.

G.2 The Offeror shall provide the annual licenses costs.

G.3 The Offeror shall provide the Configuration and Customization for 4160 hours per year.

Time Period for this Stage: July 1, 2023 – June 30, 2024

	Number of Months (N)	Price per Month (PPM)	Total Price (N*PPM)	Calculated Percent Total Price (Total Price/Total Stage Price *100)
(G.1) Fixed Monthly Payments	12	$	$	%
(G.2) Licenses Price[13]	N/A	N/A	$	%
(G.3) Configuration/ Customization Price[14]	N/A	N/A	$	%
(G.4) Total Stage Price *(Sum G.1 – G.3)*	N/A	N/A	$	100%

[13] License information shall also be included as a line item in Pricing Schedule L – Licenses.

[14] Total amount from Schedule K - Configuration and Customization, shall be transferred for this line item.

PRICE SCHEDULE H – ONGOING OPERATIONS AND MAINTENANCE, CONTRACT STAGE SFY 2024-25 (RENEWAL OPTION YEAR 2)

The Offeror shall provide pricing, independent of the Design, Development and Implementation Contract Stage, that is specifically related to the provision of Ongoing Operations and Maintenance (O&M) for the referenced Contract Stage State Fiscal Year (SFY) in support of the Offeror's final negotiated solution.

H.1 The Offeror shall provide a fixed price for the complete Contract Stage over the State Fiscal Year (SFY) (July 1 -June 30) that includes a fixed monthly payment.

H.2 The Offeror shall provide the annual licenses costs.

H.3 The Offeror shall provide the Configuration and Customization for 4160 hours per year.

Time Period for this Stage: July 1, 2024 – June 30, 2025

	Number of Months (N)	**Price per Month (PPM)**	**Total Price (N*PPM)**	**Calculated Percent Total Price (Total Price/Total Stage Price *100)**
(H.1) Fixed Monthly Payments	12	$	$	%
(H.2) Licenses Price[15]	N/A	N/A	$	%
(H.3) Configuration/ Customization Price[16]	N/A	N/A	$	%
(H.4) Total Stage Price *(Sum H.1 – H.3)*	N/A	N/A	$	100%

[15] License information shall also be included as a line item in Pricing Schedule L – Licenses.

[16] Total amount from Schedule K - Configuration and Customization, shall be transferred for this line item.

PRICE SCHEDULE I – ONGOING OPERATIONS AND MAINTENANCE, CONTRACT STAGE SFY 2025-26 (RENEWAL OPTION YEAR 3)

The Offeror shall provide pricing, independent of the Design, Development and Implementation Contract Stage, that is specifically related to the provision of Ongoing Operations and Maintenance (O&M) for the referenced Contract Stage State Fiscal Year (SFY) in support of the Offeror's final negotiated solution.

I.1 The Offeror shall provide a fixed price for the complete Contract Stage over the State Fiscal Year (SFY) (July 1 -June 30) that includes a fixed monthly payment.

I.2 The Offeror shall provide the annual licenses costs.

I.3 The Offeror shall provide the Configuration and Customization for 4160 hours per year.

Time Period for this Stage: July 1, 2024 – June 30, 2025

	Number of Months (N)	**Price per Month (PPM)**	**Total Price (N*PPM)**	**Calculated Percent Total Price (Total Price/Total Stage Price *100)**
(I.1) Fixed Monthly Payments	12	$	$	%
(I.2) Licenses Price[17]	N/A	N/A	$	%
(I.3) Configuration/ Customization Price[18]	N/A	N/A	$	%
(I.4) Total Stage Price *(Sum I.1 – I.3)*	N/A	N/A	$	100%

[17] License information shall also be included as a line item in Pricing Schedule L – Licenses.

[18] Total amount from Schedule K - Configuration and Customization, shall be transferred for this line item.

PRICE SCHEDULE J – PRICES FOR OPTIONAL ENHANCEMENTS

Schedule J is to allow DMAS to identify functionality that may be considered as optional by the Department, as well as allow the Offeror to provide any additional optional services and/or enhancements it feels may complement its proposed solution for the Enterprise Data Warehouse Solution.

DMAS has defined one (1) optional enhancement. This option is described in Section 3.c, DMAS Defined Options. Price Schedule J (line J.1) below contains this option. The Offeror must complete the pricing for the Mandatory Pricing options.

Optional pricing is outside of the DDI and O&M costs and shall not be included in the scoring (to include scoring of SWaM). These enhancements and prices are being requested for informational purposes, and the Department does not agree to accept any Optional requirements proposed unless negotiated in the Contract with the successful Offeror.

If any of the Optional requirements, as designated by the Offeror, are part of the Offeror's base solution and have a zero additional cost, please indicate 'included in base' in the Price column.

The Offeror shall include in the price for each optional enhancement all relevant additional prices associated, including resources, technical prices, hardware, or other prices expressly associated with the option.

Optional Enhancements[19]	**Price**	
Meeting Space – Optional Pricing	(J.1)	$
Additional Offeror Specific Optional Item	(J.2)	$
Additional Offeror Specific Optional Item	(J.3)	$
Additional Offeror Specific Optional Item	(J.4)	$
Additional Offeror Specific Optional Item	(J.5)	$
Additional Offeror Specific Optional Item	(J.6)	$
Additional Offeror Specific Optional Item	(J.7)	$
Total Price for Optional Enhancements[20] **(Sum J.1 – J.7)**	(J.8)	$

[19] NOTE: Optional enhancements and costs are for informational purposes and will not be included in the scoring of the pricing proposals or the scoring of SWaM Plans but may be discussed and included during contract negotiations.

PRICE SCHEDULE K – CONFIGURATION AND CUSTOMIZATION

The Offeror shall propose the fixed hourly labor rates for the Offeror's personnel labor categories that is based on rates and stated effort for Configuration and Customization, including Testing and Validation Staff, Business Analyst Staff, Technical Writing and System Documentation Staff, and Project Management Staff resources needed to support Configuration Staff and Customization Staff. The rates shall include overhead, travel, profit, equipment usage and other miscellaneous costs. These hourly rates shall also be used to price Contract Modifications to the Contract if the Department decides additional Configuration Staff, Customization Staff and staff to support Configuration and Customization are needed beyond the base hours.

Configuration and Customization shall add up to at least two (2) FTE. One (1) FTE equals two thousand eighty (2,080) hours per year. 2 FTE x 2,080 = 4,160 hours. In addition, Offeror shall provide number, total hours and hourly rate for staff to support Configuration and Customization Staff.

# Staff Assigned	Primary Job Assignment	Total Hours	Hourly Rate[21]	Total Price
1.0 FTE	Configuration Staff	2,080	$	(K.1) $
1.0 FTE	Customization Staff	2,080	$	(K.2) $
2.0 FTE	**TOTAL Configuration and Customization Staff** ***(sum of K.1 and K.2)***	**4,160**		**(K.3)** $
Staff to Support 4,160 hours Configuration and Customization per year				
	Testing and Validation Staff		$	(K.4) $
	Business Analyst Staff		$	(K.5) $
	Technical Writing and System Documentation Staff		$	(K.6) $
	Project Management Staff		$	(K.7) $
	TOTAL for Configuration and Customization Support Staff ***(sum of K.4, K.5, K.6, and K.7)***			**(K.8) $**

[20] The Offeror may add additional rows as necessary to capture pricing for additional proposed options to the solutions.

[21] Hourly Rates shall be effective from DDI Contract Stage 1, SFY 2016-17, through contract based period, O&M Contract Stage SFY2024-25.

	TOTAL for providing 4160 hours of Configuration and Customization ***(sum of K.3 and K.8)***	**(K.9)**[22] **$**
Cost of Living Assessment (COLA) Factor (Per SFY) if the Department requires the purchase of additional Enhancement hours.		**%**

PRICE SCHEDULE L – LICENSES

Offeror shall provide pricing for any fees related to the licensing of the proposed solution and Operations Services software product or its components. The Offeror shall provide the licensing price for each individual System and Operation component and third-party tool included as part of the proposed software solution that requires a license agreement. The prices for each item are to be quoted separately unless bundled pricing is offered. Pricing should span the entire Contract period (DDI and O&M). Ongoing maintenance of the licenses Payment for licensing prices will be based on when the licenses are acquired. For the evaluation purposes, Offeror shall assume one hundred (100) Department licenses are needed per product/component, based on user access. Licenses not based on user access, such as at the server or processor level, should be specified below and the number of licenses needed should be noted.

License Description ***(Terms and Options)***	*Quantity[1]*	***Unit Price***	***Total Price***
SAS Enterprise Users	*100*	*$2,225*	*(L.1)*
SharePoint Users	*100*	*$230*	*(L.2)*
		$	*(L.3)*
		$	*(L.4)*
		$	*(L.5)*
		$	*(L.6)*
Total Licensing Price ***(sum of L.1, L.2 L.3, L.4, L.5, and L.6)***			***(L7)***[23]

[22] Transfer total amount to appropriate line item on Schedules B-I.

[23] Transfer total amount to appropriate line item on Schedules A-I.

PRICE SCHEDULE M – SUPPLEMENTAL STAFF PRICING

In pricing Schedule M, Offerors should submit the fixed hourly rate for each labor category utilized and calculated into the fixed monthly payments line item for ongoing operations and maintenance for Schedules B-I . Offerors should include the labor category and indicate the hourly rate for each category. The hourly rate must be a fully loaded rate and include all personnel, overhead, indirect, travel, profit, equipment usage, and other miscellaneous costs. All cost associated with Schedule M is for informational purposes only but may be used during the performance of the contract to calculate Offeror reimbursement rates for other projects identified and approved by the Department.

Labor Category[24]	Hourly Rate
	$
	$
	$

[24] Offeror shall complete this table and expand as necessary to capture all labor categories to be used by them in the performance of their proposed solution.

PRICE SCHEDULE N – SUMMARY OF ALL PRICING SCHEDULES

This Price Schedule summary is intended to include the proposed prices from each Price Schedule included in the Offeror's Price Proposal that will be used in the Price Evaluation. If there is a discrepancy between the amount shown here and the individual Price Schedules, the price information from the individual Price Schedule will be used during evaluation.

Pricing Stage	Price
Total Implementation Contract Stage 1 SFY 2016-17 (Total Stage Price from Schedule A.5)	**(A.5)**
Total Implementation Contract Stage 1 SFY 2017-18 (Total Stage Price from Schedule A.10)	**(A.10)**
Total Ongoing Operations and Maintenance, Contract Stage SFY 2018-19 (Total Stage Price from Schedule B)	**(B.4)**
Total Ongoing Operations and Maintenance, Contract Stage SFY 2019-20 (Total Stage Price from Schedule C)	**(C.4)**
Total Ongoing Operations and Maintenance, Contract Stage SFY 2020-21 (Total Stage Price from Schedule D)	**(D.4)**
Total Ongoing Operations and Maintenance, Contract Stage SFY 2021-22 (Total Stage Price from Schedule E)	**(E.4)**
Total Ongoing Operations and Maintenance, Contract Stage SFY 2022-23 (Total Stage Price from Schedule F)	**(F.4)**
Total Ongoing Operations and Maintenance, Contract Stage SFY 2023-24 (Option Year Renewal) (Total Stage Price from Schedule G)	**(G.4)**
Total Ongoing Operations and Maintenance, Contract Stage SFY 2024-25 (Option Year Renewal) (Total Stage Price from Schedule H)	**(H.4)**
Total Ongoing Operations and Maintenance, Contract Stage SFY 2025-26 (Option Year Renewal) (Total Stage Price from Schedule I)	**(I.4)**
Operations and Maintenance Subtotal ***(Sum B.4, C.4, D.4, E.4, F.4, G.4, H.4 and I.4)***	**(O&M)**

Pricing Stage	Price
Total Price Bid[25] ***(sum of A.5, A.10 and O&M)***	**(Total)**

[25] The total price bid will also be used for SWaM scoring purposes.

APPENDIX D – COMMONWEALTH CORPORATION COMMISSION FORM

Virginia State Corporation Commission (SCC) registration information. The Supplier:

☐ is a corporation or other business entity with the following SCC identification number: _____ -OR-

☐ is not a corporation, limited liability company, limited partnership, registered limited liability partnership, or business trust -OR-

☐ is an out-of-state business entity that does not regularly and continuously maintain as part of its ordinary and customary business any employees, agents, offices, facilities, or inventories in Virginia (not counting any employees or agents in Virginia who merely solicit orders that require acceptance outside Virginia before they become contracts, and not counting any incidental presence of the Supplier in Virginia that is needed in order to assemble, maintain, and repair goods in accordance with the contracts by which such goods were sold and shipped into Virginia from Supplier's out-of-state location) -OR-

☐ is an out-of-state business entity that is including with this proposal an opinion of legal counsel which accurately and completely discloses the undersigned Supplier's current contacts with Virginia and describes why those contacts do not constitute the transaction of business in Virginia within the meaning of § 13.1-757 or other similar provisions in Titles 13.1 or 50 of the Code of Virginia.

NOTE >> Check the following box if you have not completed any of the foregoing options but currently have pending before the SCC an application for authority to transact business in the Commonwealth of Virginia and wish to be considered for a waiver to allow you to submit the SCC identification number after the due date for proposals (the Commonwealth reserves the right to determine in its sole discretion whether to allow such waiver): ☐

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APPENDIX E – CERTIFICATE OF COMPLIANCE WITH PROHIBITION OF POLITICAL CONTRIBUTIONS AND GIFTS DURING THE PROCUREMENT PROCESS

Certification of Compliance

Certification of Compliance with Prohibition of Political Contributions and Gifts During the Procurement Process

For contracts with a stated or expected value of $5 million or more except those awarded as the result of competitive sealed bidding

I, _____, a representative of _____,

Please Print Name Name of Bidder/Offeror

am submitting a bid/proposal to _____ in response to

Name of Agency/Institution

_____, a solicitation where stated or expected contract value is

Solicitation/Contract #

$5 million or more which is being solicited by a method of procurement other than competitive sealed bidding as defined in § 2.2-4301 of the *Code of Virginia*.

I hereby certify the following statements to be true with respect to the provisions of §2.2-4376.1 of the *Code of Virginia*. I further state that I have the authority to make the following representation on behalf of myself and the business entity:

1. The bidder/Offeror shall not knowingly provide a contribution, gift, or other item with a value greater than $50 or make an express or implied promise to make such a contribution or gift to the Governor, his political action committee, or the Governor's Secretaries, if the Secretary is responsible to the Governor for an agency with jurisdiction over the matters at issue, during the period between the submission of the bid/proposal and the award of the contract.

2. No individual who is an officer or director of the bidder/Offeror, shall knowingly provide a contribution, gift, or other item with a value greater than $50 or make an express or implied promise to make such a contribution or gift to the Governor, his political action committee, or the Governor's Secretaries, if the Secretary is responsible to the Governor for an agency with jurisdiction over the matters at issue, during the period between the submission of the bid/proposal and the award of the contract.

3. I understand that any person who violates § 2.2-4376.1 of the *Code of Virginia* shall be subject to a civil penalty of $500 or up to two times the amount of the contribution or gift, whichever is greater.

_____

Signature

_____

Title

_____

Date

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APPENDIX F – PROPRIETARY/CONFIDENTIAL INFORMATION IDENTIFICATION FORM

Proprietary/Confidential Information Identification Form

Trade secrets or proprietary information submitted by an Offeror shall not be subject to public disclosure under the Virginia Freedom of Information Act; however, the Offeror must invoke the protections of §2.2-4342F of the *Code of Virginia*, in writing, either before or at the time the data or other material is submitted. The written notice must specifically identify the data or materials to be protected including the section of the proposal in which it is contained and the page numbers, and states the reasons why protection is necessary. The proprietary or trade secret material submitted must be identified by some distinct method such as highlighting or underlining and must include only the specific words, figures, or paragraphs that constitute trade secret or proprietary information. In addition, a summary of such information shall be submitted on this form. The classification of an entire proposal document, line item prices, and/or total proposal prices as proprietary or trade secrets is not acceptable. If, after being given reasonable time, the Offeror refuses to withdraw such a classification designation, the proposal may be scored lower or eliminated from further consideration.

Name of Firm/Offeror:_____, invokes the protections of § 2.2-4342F of the *Code of Virginia* for the following portions of my proposal submitted on _____.

Date

Signature:_____ Title:_____

DATA/MATERIAL TO BE PROTECTED	SECTION NO., & PAGE NO.	REASON WHY PROTECTION IS NECESSARY

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APPENDIX G – OFFEROR CERTIFICATION

Offeror Certification

(Offeror Name) certifies: (1) that it has not offered to any Commonwealth employee or contractor who had official responsibility for or otherwise played a role in this procurement, RFP 2016-05, or who played a role in the procurement on behalf of DMAS, money or other thing of value for or in consideration of the use of the employee or contractor's public position to obtain the contract that will result from this procurement; (2) that it did not receive any information concerning this procurement that is not available to the other Offerors or to the general public from any Commonwealth employee or contractor who had official responsibility for this procurement or who played a role in the procurement on behalf of DMAS; and (3) that it has complied with the Virginia Public Procurement Act, Code of Virginia § 2.2-4300 *et. seq.*

Signature: _____

Printed Name: _____

Organization: _____

Date: _____

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APPENDIX H – CONTRACT TEMPLATE

The Contract Template has been provided in a Microsoft Word file format, and it is included as an attachment to this RFP in the Procurement Library.

APPENDIX I – MILESTONES AND DELIVERABLES

The following table provides the Milestones and Deliverables associated with this contract and shall be used to inform the Contractor's Master Work Plan.

Milestone/Deliverable	Completion/Updates	Responsible Contractor
DDI		
Initiation		
Project Proposal – Input to DMAS prepared deliverable	Response to RFP	Each Contractor
Project Charter – Input to DMAS prepared deliverable	2 weeks after contract signed	Each Contractor
Planning		
Contractor Management Team Organization Chart	2 weeks after contract signed	Each Contractor
Master Integration Plan	4 weeks after contract signed	ISS Contractor
Detailed Project Management Plan	2 weeks after contract signed	Each Contractor
Master Work Plan (in MS Project)	4 weeks after contract signed and weekly thereafter	Each Contractor
Performance Reporting Plan and Status Summary	6 weeks after contract signed and weekly thereafter	Each Contractor
Communications Management Plan	6 weeks after contract signed and weekly thereafter	Each Contractor
Staff Acquisition Plan	6 weeks after contract signed and weekly thereafter	Each Contractor
Hardware and Equipment Acquisition Plan	6 weeks after contract signed and each week thereafter until phase end	Each Contractor
Software Acquisition and Installation Plan	6 weeks after contract signed and each week thereafter until phase end	Each Contractor
Documentation Management Plan	12 weeks after contract signed and each week thereafter	Each Contractor
Risk and Issues Management Plan, includes Escalation Management Plan	12 weeks after contract signed and each week thereafter	Each Contractor
Quality Management Plan	16 weeks after contract signed and each week thereafter	Each Contractor
Scope/Deliverable Management Plan	4 weeks after contract signed and each week thereafter	Each Contractor

Milestone/Deliverable	Completion/Updates	Responsible Contractor
Requirements Management Plan	12 weeks after contract signed and each week thereafter	Each Contractor
Security Plan	12 weeks after contract signed and after any changes	Each Contractor
Change Management Plan	10 weeks after contract signed and each week thereafter	Each Contractor
Configuration Management Plan	8 weeks after contract signed and part of project execution and control thereafter	Each Contractor
Conversion Plan	8 weeks after contract signed	Each Contractor
Test Management Plan	10 weeks after contract signed	Each Contractor
CMS Certification Plan	12 weeks after contract signed and updated each week thereafter	Each Contractor
Release Management Plan	12 weeks after contract signed	Each Contractor
Execution and Control		
Detailed Project Management Plan Update	As needed	Each Contractor
Master Work Plan (in MS Project) Update	Weekly	Each Contractor
Performance Reporting Plan Update	Weekly	Each Contractor
Staff Acquisition Update	Weekly	Each Contractor
Documentation Management Plan Update	Weekly	Each Contractor
Risk and Issues Management Plan	Weekly	Each Contractor
Security Plan	After any changes	Each Contractor
Quality Management Plan	Weekly	Each Contractor
Training Plan	4 months before Implementation	Each Contractor
Finalized Requirements Traceability Matrix	12 weeks after contract signed	Department
Detailed Specification Design DSD)	15 weeks after contract signed	Each Contractor
Change and Configuration Management	As needed	Each Contractor
Implementation		
Implementation and Transition Plan	3 months before Implementation	Each Contractor
Closeout		
Lessons Learned Report	3 months Post-implementation	Each Contractor
Project Closeout Report (Contractor Input Only)	3 months Post-implementation	Each Contractor
Evaluation		

Milestone/Deliverable	Completion/Updates	Responsible Contractor
Project Evaluation (Contractor Input Only)	1 Year Post-Implementation	Each Contractor
OPERATIONS		
Quality Management Plan	2 months before Operations – Updated per project / release	Each Contractor
Documentation Management Plan	2 months before Operations – Updated per project / release	Each Contractor
Change and Configuration Management Plan	2 months before Operations – Updated per project / release	Each Contractor
Risk and Issues Management Plan	2 months before Operations – Updated per project / release	Each Contractor
Training Plan	2 months before Operations – Updated per project / release	Each Contractor
Security Plan	Updated after any changes	Each Contractor
Communications Plan	2 months before Operations – Updated per project / release	Each Contractor
SLA Reporting Application	2 months before Operations – Weekly thereafter	Each Contractor
Disaster Recovery Plan	2 months before Operations – Updated as needed	Each Contractor
Business Continuity Plan	2 months before Operations – Updated as needed	Each Contractor
Operations Production Status	Weekly – Content to be determined	Each Contractor
Root Cause Analysis	After any production interruption: Within 5 days of the event	Each Contractor
TURNOVER		
Turnover Plan	Per Contract	Each Contractor

APPENDIX J – ENTERPRISE DATA WAREHOUSE SOLUTION REQUIREMENTS

The following tables of requirements are provided for informational purposes in this RFP. Contractors shall complete the Requirements Traceability Matrix (RTM) provided in the Procurement Library and include in Volume I – Technical Proposal.

J.1 – TECHNOLOGY STANDARDS

Requirement ID	Requirement
EDWS-TECH-STND-001	All the artifacts developed as part of the proposed Solution shall be compliant with the CMS and HIPAA standards and requirements.
EDWS-TECH-STND-002	The Solution shall use rules based, table driven modular, and reusable components.
EDWS-TECH-STND-003	The Solution shall facilitate online, browser based web capabilities with no client component download(s) for all authorized end users including, but not limited to providers and members.
EDWS-TECH-STND-004	The Solution shall support functionality to interface with multiple entities outside the MES for exchange of information.
EDWS-TECH-STND-005	The Solution shall comply with all current and future HIPAA standard Transactions and Code Sets (TCS) in place or mandated by the Department and CMS.
EDWS-TECH-STND-006	The Solution shall implement standard policies and practices to ensure the security and integrity of the information to be exchanged.
EDWS-TECH-STND-007	The Solution shall provide notification to the ISS contractor of all changes to application program interface (API) on a timely basis.
EDWS-TECH-STND-008	The Solution shall provide standard and ad hoc reporting capabilities for all modules of the proposed solution which are accessed by Department end users and other stakeholders.
EDWS-TECH-STND-009	The Solution shall meet the Federal reporting requirements and performance standards as defined by CMS and the CMS certification checklists.
EDWS-TECH-STND-010	The Solution shall implement and support a reporting repository with Web based access by authorized end users, including the ability to extract data to be used with desktop applications.
EDWS-TECH-STND-011	The Solution shall provide interoperability between the modules of the proposed solution and Department imaging and document management systems. All Department documents and images on any media type received or disseminated shall be accessible, stored, and indexed on the Enterprise Content Management system.
EDWS-TECH-STND-012	The Solution shall allow users to select among several format types (e.g., PDF, Microsoft Excel, Microsoft Word) for any outputs produced. The output media types shall be role based or by individual end user(s).
EDWS-TECH-STND-013	The Solution shall implement relevant standards including, but not limited to NIEM, CAQH-CORE, HL7, and HIPAA for data interchange.

Requirement ID	Requirement
EDWS-TECH-STND-014	The Solution shall provide single sign-on (SSO) capability using Commonwealth standards for login and authentication. The Contractor's system shall include an end user authentication process that permits the end user to enter one (1) name and password to access multiple applications. This process authenticates the user for those applications they have access rights to and eliminates the need for further prompts when switching between applications during a session.
EDWS-TECH-STND-015	The Solution shall process all inbound and outbound files at a frequency as defined by the Department.
EDWS-TECH-STND-016	The Solution shall support and monitor the processing of all transaction files and notify the Department of all transactions which have not been processed successfully.
EDWS-TECH-STND-017	The Solution shall accept and apply interface data accurately 100% of the time.
EDWS-TECH-STND-018	The Solution shall reconcile errors identified during the processing of any transaction file and reprocess partner transactions within the agreed upon SLA.
EDWS-TECH-STND-019	The Solution shall comply with Commonwealth and Federal records management policies and retention schedules.
EDWS-TECH-STND-020	The Solution shall ensure archived data is retrievable, formatted to match the original intake document, and shows the changes during processing.
EDWS-TECH-STND-021	The Solution shall comply with all Commonwealth and Federal laws, grant requirements, rules, regulations, guidelines, policies, and procedures for destruction of records.
EDWS-TECH-STND-022	The Solution shall retain all records for both paper and electronic claims as per the Commonwealth and Federal guidelines.
EDWS-TECH-STND-023	The Solution shall comply with and align with Commonwealth Technology Standards.
EDWS-TECH-STND-024	The Solution for proposed interfaces to Commonwealth systems shall comply with or have approved exceptions to all applicable Commonwealth Data Standards as found at: http://www.vita.virginia.gov/oversight/default.aspx?id=10344 If not, please explain.
EDWS-TECH-STND-025	The Solution shall provide effective, interactive control and use with nonvisual means and provide 508 Compliance in accordance with the following standard regarding IT Accessibility and 508 Compliance: http://www.vita.virginia.gov/uploadedFiles/Library/AccessibilityStandard_GOV103-00_Eff_11-04-05.pdf (Refer to www.section508.gov and www.access-board.gov for further information) If yes, please describe how this functionality is achieved and include a completed Voluntary Product Accessibility Template (VPAT) with your proposal. (The VPAT template is located in APPENDIX C of the Accessibility Standard (GOV103-00)). If no, does your solution/application/product provide alternate accessibility functionality? Please describe.

Requirement ID	Requirement
EDWS-TECH-STND-026	The Solution shall comply with all current COV ITRM Policies and Standards, as applicable, found at: http://www.vita.virginia.gov/library/default.aspx?id=537? If proposed solution does not, please provide details that specify the Standard/Policy and how Offeror's solution does not comply.

J.2 – Major Milestones and Deliverables

Requirement ID	Requirement
EDWS-PROJ-DDI-001	The Contractor shall provide a description of a Project Management methodology that will be used to implement the Solution and that follows Project Management industry best practices while coordinating changes with the MES ISS Contractor and other contractors. The Contractor shall propose tools, processes, and procedures for the Project Management methodology.
EDWS-PROJ-DDI-002	The Contractor shall provide the deliverables identified for each of the project phases in Appendix I: ➢ Initiation ➢ Planning ➢ Execution and Control ➢ Implementation ➢ Closeout ➢ Evaluation
EDWS-PROJ-DDI-003	The Contractor shall provide the status of the project to the MES Program Management Office according to the schedule outlined in the DDI Project Plan chart in Appendix I. The Contractor PMO shall include the following in the weekly status reporting for the lifecycle of the project: ➢ Issues and Risk Management ➢ Milestone status ➢ Change Management ➢ Action Items Management ➢ Project Meeting Minutes
EDWS-PROJ-DDI-004	For any milestones or deliverables which are missed or projected to be missed, the Contractor shall provide a Corrective Action Plan (CAP) that includes the following information: ➢ Root cause ➢ Impact on schedule, scope and costs ➢ Milestone recovery strategy ➢ Milestone recovery date ➢ Project recovery strategy ➢ Project recovery date

Requirement ID	Requirement
EDWS-PROJ-DDI-005	The Contractor shall follow the DDI Change Management process agreed to by DMAS. An Enterprise Change Management process shall be established by the MES ISS Contractor and Program Management Office along with Contractor input to address scope, schedule, or cost changes.
EDWS-PROJ-DDI-006	The Contractor shall conduct detailed design and joint application requirement meetings with Department staff, other impacted MES solution contractors, and ISS Contractor staff to produce a detailed specification design document for development, configuration, testing, and implementation.
EDWS-PROJ-DDI-007	The Contractor shall provide a revised work breakdown structure from the original submission, which includes Department project team and ISS activities (provided by the MES ISS Contractor) and any other impacted MES contractors which have been mutually agreed-upon dependencies for DMAS approval.
EDWS-PROJ-DDI-008	The Contractor shall provide a Project Manager (PM) with the Key Staff requirements and agrees to replace the PM only if necessary, and with someone possessing equally or more qualified skills and experience, as approved by the agency.
EDWS-PROJ-DDI-009	The Contractor shall entertain baseline changes to the COTS package and provide a method for enhancement input in lieu of customizations through a User Input group or another forum to accept product input.
EDWS-PROJ-DDI-010	The Contractor shall provide a Hardware and Equipment Acquisition Plan for the DDI.
EDWS-PROJ-DDI-011	The Contractor shall provide a Software Acquisition and Installation Plan for the DDI.
EDWS-PROJ-DDI-012	The Contractor shall provide a Risk Management Plan for the DDI.
EDWS-PROJ-DDI-013	The Contractor shall provide a Quality Management Plan for the DDI.
EDWS-PROJ-DDI-014	The Contractor shall provide an Implementation and Transition Plan for the DDI which is coordinated with Department staff, and possibly other dependent MES contractors.
EDWS-PROJ-DDI-015	The Contractor shall provide a Training Plan for the DDI which addresses business owner input to satisfy operational needs.
EDWS-PROJ-DDI-016	The Contractor shall conduct all DDI training in accordance with the approved DDI Training Plan.
EDWS-PROJ-DDI-017	The Contractor shall provide a Training Plan for Operations which ensures ongoing operational training needs are met.
EDWS-PROJ-DDI-018	The Contractor shall conduct all Operations training in accordance with the approved Operations Training Plan.
EDWS-PROJ-DDI-019	The Contractor shall analyze and document project lessons learned, hold a walkthrough meeting of the results and provide an evaluation report.
EDWS-PROJ-DDI-020	The Contractor shall provide a Communications Management Plan which addresses all stakeholders' communication needs for the project.
EDWS-PROJ-DDI-021	The Contractor shall provide a Performance Reporting Plan which includes status reporting and critical success factors.

Requirement ID	Requirement
EDWS-PROJ-DDI-022	The Contractor shall provide a Documentation Management Plan that: ➢ Identifies all of the documentation and deliverables that will be produced to support its DDI methodology as well as on-going Operations and Maintenance. ➢ Provides what is needed by the Contractor to successfully implement and operate the proposed solution. ➢ Provides DMAS with the information it requires to understand and approve the details of the solution as well as provide the information it needs to fulfill its business requirements with respect to the solution.
EDWS-PROJ-DDI-023	The Contractor shall provide a Release Management Plan and milestones on an annual schedule with an approach to work with the MES ISS Contractor, any other impacted MES Contractor, and DMAS PMO with a desired 6-month lead time.
EDWS-PROJ-DDI-024	The Contractor shall provide a detailed project Plan for each new project or release that is coordinated with the MES ISS Contractor, any other impacted MES Contractor, and agency PMO.
EDWS-PROJ-DDI-025	The Contractor shall provide a Resource Utilization and Acquisition plan for each new project or release including Project Management, technical support, and business support as needed.
EDWS-PROJ-DDI-026	The Contractor shall develop a Root Cause Analysis process and reporting in conjunction with the ISS Contractor for all defects discovered.
EDWS-PROJ-DDI-027	The Contractor shall create a DDI Project Management Plan according to the schedule outlined in Appendix I to be approved by DMAS. The project management plan shall include: ➢ Quality Management Plan ➢ Scope Management Plan ➢ Requirements Management Plan ➢ Risk and Issues Management Plan ➢ Change Management Plan ➢ Configuration Management Plan ➢ Project Performance Management Summary Plan ➢ Communications Management Plan ➢ Documentation Management Plan ➢ Training Plan ➢ Disaster Recovery Plan - DDI ➢ Business Continuity Plan ➢ Turnover Plan

Requirement ID	Requirement
EDWS-PROJ-DDI-028	The Contractor shall develop a Project Work Breakdown Structure (WBS) to include both Contractor and DMAS milestones and tasks. An initial Work Plan, according to the schedule outlined in Appendix I, shall involve top-down planning. The work plan shall adhere to PMBOK® best practices for project management. The WBS shall include tasks, resources, deliverables, task dependencies, percent complete, planned start, planned finish, actual start, and actual finish columns. The baseline work plan shall be delivered within 60 days of contract signing unless otherwise agreed to by the Agency. The Work Plan shall be updated and presented weekly.
EDWS-PROJ-DDI-029	The Contractor's PMO shall participate in Agency Integration and Program Management Meetings.
EDWS-PROJ-DDI-030	The Contractor shall make Project Documents available online to the Agency and contractor staff including but not limited to: work plan, status reports, status meeting agenda, and minutes.
EDWS-PROJ-DDI-031	The Contractor shall develop a Project CMS Certification Plan which defines the Contractor's approach to CMS certification. It shall include processes and procedures which will be used to manage certification requirements throughout the project lifecycle. The plan shall include, but not be limited to: completing the certification checklist, complete certification phase deliverables, validate solution functionality against the checklist, and create traceable deliverables to the checklist.
EDWS-PROJ-DDI-032	The Contractor shall create documents which support certification activities.
EDWS-PROJ-DDI-033	The Contractor shall assist and participate in CMS certification visits.
EDWS-PROJ-DDI-034	The Contractor shall respond to CMS queries during and after the site visit.
EDWS-PROJ-DDI-035	The Contractor shall provide training which includes specific areas such as quality management, risk management, requirements management, overall design and development of the solution and be comprehensive enough so the Agency PMO can participate in the deliverable production and review process.
EDWS-PROJ-DDI-036	The Contractor's PMO shall work with DMAS and have a PM and other resources willing to periodically be onsite to attend meetings and to conduct presentations as requested.
EDWS-PROJ-DDI-037	The Contractor shall provide a deliverable tracking method to ensure all DDI related deliverables have been accounted for and scheduled and coordinated with the Department MES PMO. All deliverables shall be approved by DMAS.
EDWS-PROJ-DDI-038	The Contractor shall provide an Escalation Management Plan to include risk and issue resolution paths through the organizational structure.
EDWS-PROJ-DDI-039	The Contractor shall provide the status of the project to the MES Program Management Office according to the schedule outlined in the DDI Project Plan chart Appendix I with input from the DMAS MES PMO. Reports shall contain Key Project indicators including Cost Performance Index (CPI) and Schedule Performance Index (SPI). The reports shall convey upcoming milestones progress and overall percentage complete. The report shall have updates on risks, issues and action items. A dashboard shall be created with standards for reporting Green, Yellow, or Red status. Any Red status reporting shall be accompanied by a Corrective Action Plan (CAP). The Contractor shall provide weekly meeting minutes.

Requirement ID	Requirement
EDWS-PROJ-DDI-040	The Contractor shall provide end user documentation written in a procedural, systematic format, and aligned with business transformation documents.
EDWS-PROJ-DDI-041	The Contractor shall ensure that abbreviations and acronyms are defined and consistent throughout the documentation.
EDWS-PROJ-DDI-042	The Contractor shall use consistent field names for the same fields on different records throughout the documentation.
EDWS-PROJ-DDI-043	The Contractor shall provide online documentation, including an online search capability with context sensitive help screens.
EDWS-PROJ-DDI-044	The Contractor shall ensure definitions of codes used in various sections of end user manuals are consistent.
EDWS-PROJ-DDI-045	The Contractor shall identify acronyms used in end user instructions, and ensure that they are consistent with windows, screens, reports, and the data element dictionary.
EDWS-PROJ-DDI-046	The Contractor shall provide illustrations of windows and screens used in that module, with all data elements on the screens identified by number, in each end user manuals.
EDWS-PROJ-DDI-047	The Contractor shall provide an electronic documentation format that facilitates efficient and immediate updating and dissemination of new or modified data.
EDWS-PROJ-DDI-048	The Contractor shall provide a way to update the electronic versions of the document. Each version shall have: ➢ All pages numbered within each section ➢ A new revision date on each page ➢ All revisions clearly identified in bold print
EDWS-PROJ-DDI-049	The Contractor shall create and maintain end user documentation consistent with the current Department standards.
EDWS-PROJ-DDI-050	The Contractor shall provide documentation to the Department on request on encrypted DVD/CD-ROM, and ensure access to end users via the website during the Operations Phase.
EDWS-PROJ-DDI-051	The Contractor shall ensure end user documentation is written and organized so that end users not trained in applications can learn from reading the documentation how to access the online windows/screens, read module reports, and perform ad hoc report development and other related end user functions.
EDWS-PROJ-DDI-052	The Contractor shall present descriptions of error messages for all fields incurring edits, including the necessary steps to correct such errors.

Requirement ID	Requirement
EDWS-PROJ-DDI-053	The Contractor shall provide a section in each end user manual describing all reports generated within the business area or function, which includes the following: ➢ A narrative description of each report ➢ The purpose of the report ➢ Definition of all fields in the report, including detailed explanations of calculations used to create all data and explanations of all subtotals and totals ➢ Definitions of all user defined, report specific code descriptions; and copies of representative pages of each report
EDWS-PROJ-DDI-054	The Contractor shall present together all functions and supporting material for file maintenance (e.g., coding values for fields and the names of the files presented as independent sections of the manual).
EDWS-PROJ-DDI-055	The Contractor shall ensure that instructions for making online updates clearly depict which data and files are being changed.
EDWS-PROJ-DDI-056	The Contractor shall ensure that documentation does not contain any protected health information (PHI).
EDWS-PROJ-DDI-057	The Contractor shall use draft versions of end user documentation as the basis for UAT and training, unless otherwise specified by the Department. Final versions shall be updated and completed for training before the start of the operations.
EDWS-PROJ-DDI-058	The Contractor shall exclude Contractor(s) trademarks, logos, and identifying information in, or on all documentation.
EDWS-PROJ-DDI-059	The Contractor shall provide online hyperlinks with references to Medicaid and non-Medicaid policy origination documents managed by the Department and the Contractor.
EDWS-PROJ-DDI-060	The Contractor shall provide a writing style-guide for all documentation for purposes of creating consistency among all documents and containing a maintained list of acronyms used.
EDWS-PROJ-DDI-061	The Contractor shall implement internal policy and procedures to promote data documentation, development, and management of defined data entities, attributes, data models, and relationships sufficiently to convey the overall meaning and use of Medicaid data and information.
EDWS-PROJ-DDI-062	The Contractor shall support the adoption of statewide standard data definitions, data semantics, and harmonization strategies.
EDWS-PROJ-DDI-063	The Contractor shall maintain the following flow diagrams: ➢ Overall system flow ➢ Each individual module flow ➢ Business process flow ➢ Business architecture ➢ Technical architecture ➢ Network architecture

Requirement ID	Requirement
EDWS-PROJ-DDI-064	The Contractor shall maintain the following items for reference and it shall be searchable from the web. Also it shall be kept for each environment and access to these items shall be granted by the Department. ➢ List of application servers and its usage ➢ List of web servers and its usage ➢ List of ESB and its usage ➢ Network IP and port details ➢ Environment variables ➢ Hyperlinks ➢ Document links ➢ Organization chart ➢ Contact details ➢ On-call support

J.3 – TESTING

Requirement ID	Requirement
EDWS-TEST-001	The Contractor shall provide an Integrated Test Facility (ITF) which includes separate environments for all test phases, to include at a minimum; unit, integration, SIT, UAT, interface, performance, regression, ORT, system recovery, and mock production.
EDWS-TEST-002	The Contractor shall provide the Department with access to the ITF as required for testing onsite, from State offices, and/or remotely during the DDI phase and throughout the life of the Contract.
EDWS-TEST-003	The Contractor shall provide the capability for version control in the ITF.
EDWS-TEST-004	The Contractor's test environment(s) shall be capable of mirroring the production system in its size, files, databases, processing, and reporting.
EDWS-TEST-005	As system improvements or enhancements are implemented, that functionality shall also be deployed to test environments.
EDWS-TEST-006	Test environment(s) data refresh shall be scheduled per the DMAS approved Change Management Plan.
EDWS-TEST-007	The Contractor shall provide a process for extracting data from the production environment and importing into non-production environments.
EDWS-TEST-008	The Contractor shall provide a process for masking, sanitizing, scrambling, or de-sensitizing sensitive data (e.g., PII/PHI) when extracting data from the production environment for use in non-production environments.
EDWS-TEST-009	The Solution shall provide the ability to perform temporal testing within all testing environments.
EDWS-TEST-010	The Solution shall provide the ability to allow a tester to easily manipulate the system date for temporal testing.

Requirement ID	Requirement
EDWS-TEST-011	The Solution shall provide the ability to execute performance tests of a simulated user load consistent with the actual load projected or used in production.
EDWS-TEST-012	The Contractor shall support provider testing of new provider claims submission systems by allowing providers to submit direct data entry claims and electronic claims test files that are processed through the adjudication cycle without impact on system data.
EDWS-TEST-013	The Contractor shall utilize a DMAS approved or supplied automated testing tool that works seamlessly with all components of the MES.
EDWS-TEST-014	The testing tool shall include predictive modeling that supports the ability to run "What if" scenarios related to a variety of parameters including, but not limited to rates, coverage, and budgets using historical production claims.
EDWS-TEST-015	The Contractor shall design and document detailed test cases for each sub-phase of testing.
EDWS-TEST-016	The Contractor shall provide test cases that include identifications, detailed steps, expected results, and actual results.
EDWS-TEST-017	The Contractor shall utilize a well-established and DMAS approved or supplied defect tracking tool for management and reporting of system defects.
EDWS-TEST-018	The Contractor shall perform regression testing for all defects identified and provide regression testing results.
EDWS-TEST-019	The Contractor shall submit all test results for each test sub-phase to DMAS which includes: number of test scenarios, cases, and scripts executed; pass/fail ratio; number of defects identified and corrected along with their severity ranking.
EDWS-TEST-020	The Contractor shall communicate the progress of the System Integration Test effort through a regular progress report. This report shall address all test scenarios and test cases and report the status of the test effort relative to the test schedule.
EDWS-TEST-021	The Contractor shall track and report weekly on the defects identified and the progress made toward resolution of the defects during the System Integration Test effort.
EDWS-TEST-022	The Contractor shall document and present the results from the System Integration Testing.
EDWS-TEST-023	The Contractor shall obtain DMAS approval of all tests results before testing is considered complete.
EDWS-TEST-024	The Contractor shall plan for and include Department participation and involvement in all testing efforts throughout the Software Development Lifecycle.
EDWS-TEST-025	The Contractor shall provide training on the system, process, and tools that will be used to execute UAT and training on the operation of the technical environment to support user validation.
EDWS-TEST-026	The Contractor shall support DMAS in all testing activities by providing support staff and technical expertise.
EDWS-TEST-027	The Contractor shall provide a functional demonstration of the system including any changes or enhancements prior to user acceptance testing.

Requirement ID	Requirement
EDWS-TEST-028	The Contractor shall develop a Test Management Plan to successfully meet business needs for initial product implementation.
EDWS-TEST-029	The Test Management Plan shall include the approach to each of the test phases as outlined in the Required Testing Methods.
EDWS-TEST-030	The Test Management Plan shall include the testing schedule.
EDWS-TEST-031	The Test Management Plan shall describe how, and at which phase, other Contractor products will be incorporated in the overall testing.
EDWS-TEST-032	The Test Management Plan shall include roles and responsibilities throughout all testing phases.
EDWS-TEST-033	The Test Management Plan shall describe how test scenarios, test cases, and test results will be traced to requirements.
EDWS-TEST-034	The Test Management Plan shall describe the processes, procedures, and tools for problem identification and resolution.
EDWS-TEST-035	The Test Management Plan shall include templates of test progress and defect reports.
EDWS-TEST-036	The Test Management Plan shall describe how regression testing will be done at all levels when errors are corrected.
EDWS-TEST-037	The Test Management Plan shall discuss contingencies for risk mitigation and delays during the test effort.
EDWS-TEST-038	The Test Management Plan shall define procedures for notifying DMAS of problems discovered in testing, testing progress, and adherence to the test schedule.
EDWS-TEST-039	The Test Management Plan shall include a strategy for enhancing system performance based on findings obtained during test activities.
EDWS-TEST-040	The Test Management Plan shall include a description of the process used for the identification and preparation of data required for the System Integration Test effort, including a description of the use of converted data during test.
EDWS-TEST-041	The Test Management Plan shall describe the process employed for security testing, including compliance for handling of PII and PHI.
EDWS-TEST-042	The Test Management Plan shall include a description of entry criteria and prerequisites to the System Integration Test effort.
EDWS-TEST-043	The Test Management Plan shall define the exit criteria which, when met and approved by DMAS, provide evidence of the completion of the System Integration Test effort.
EDWS-TEST-044	The Contractor shall provide a walk-through of the Test Management Plan before submitting to DMAS for approval.
EDWS-TEST-045	The Contractor shall submit the Test Management Plan for DMAS review and approval.
EDWS-TEST-046	The Test Management Plan shall describe how the Contractor will work with DMAS and MES QA Contractor to develop the Acceptance Test Plan and Test Cases.
EDWS-TEST-047	The Test Management Plan shall define how defect tracking is used to identify organizational or procedural weaknesses and track the resulting corrective actions.

Requirement ID	Requirement
EDWS-TEST-048	The Test Management Plan shall describe how services that execute on the Enterprise Service Bus (ESB) are unit, integration, and SIT tested.
EDWS-TEST-049	The Test Management Plan shall describe how message-oriented interactions is accomplished.
EDWS-TEST-050	Test Management Plan shall describe the Contractor's organizational structure and how the testing function is managed.
EDWS-TEST-051	The Test Management Plan shall describe the Contractor support that is assigned and provided to DMAS and Contractor staff for each testing phase.
EDWS-TEST-052	The Test Management Plan shall address the division of responsibilities between the Contractor, DMAS, and MES QA Contractor.
EDWS-TEST-053	The Test Management Plan shall describe how the Contractor maintains the test environments; including loading test data routinely used by the system to perform its automated processes (e.g., reference values such as system parameters, system lists, reference tables, edits, dispositions, and security tables).
EDWS-TEST-054	The Test Management Plan shall provide a testing methodology and approach on how the Contractor will test and verify conversion data and files.
EDWS-TEST-055	The Test Management Plan shall define how defects and other issues reported by DMAS are analyzed, tracked, resolved; how required system changes implemented; and how testing is integrated with other project phases.
EDWS-TEST-056	The Test Management Plan shall describe how the testing methodology accommodates workflow testing.
EDWS-TEST-057	The Test Management Plan shall provide a testing methodology and approach on how the Contractor tests and verifies Extensible Markup Language (XML).
EDWS-TEST-058	The Contractor shall develop comprehensive positive and negative test cases for all phases of testing.
EDWS-TEST-059	The Contractor shall have processes in place to routinely load production and other data into the ITF, at DMAS request, as necessary to perform its automated processes.
EDWS-TEST-060	The Contractor shall provide comprehensive documentation for requested test results for DMAS approval, prior to any software or COTS product being implemented in the production environment.
EDWS-TEST-061	The Contractor shall be responsible for scheduling and coordinating all testing activities to ensure that each test is prepared and performed in accordance with the test plan.

J.4 – Change Management

Requirement ID	Requirement
EDWS-CHG-MGT-001	The Contractor shall provide a DDI Change Management Plan which meets the Project Management Institute's standards contained in the Project Management Body of Knowledge (PMBOK®), and addresses and defines processes for managing changes to the project requirements, deliverables, and other components.

Requirement ID	Requirement
EDWS-CHG-MGT-002	The Contractor shall provide an Operations Change Management Plan which meets the Project Management Institute's standards contained in the Project Management Body of Knowledge (PMBOK®), and addresses and defines processes for managing changes to any of the production environment components, including but not limited to software, hardware, data, and documentation.
EDWS-CHG-MGT-003	The Contractor shall provide the capability to support a change request methodology and system, including work flow with electronic signatures to track the requests/projects from initiation to closure, and support management of the requests. The Solution shall include storage of and linkage to all SDLC deliverables for each request/project.
EDWS-CHG-MGT-004	The Contractor shall submit a proposed Impact Assessment Form with instructions to be used in the Change Management process that includes accounting for change in: ➢ Scope ➢ Schedule ➢ Costs or Resources ➢ Business Process Definition ➢ Documentation ➢ Performance Standards ➢ Configuration ➢ Risks
EDWS-CHG-MGT-005	The Contractor shall follow the best practices guidelines for Change Management as described in ISO/IEC 20000 [1 to 11] standards for Information Technology Service Management (ITSM), which is contained within the Information Technology Infrastructure Library (ITIL) framework. Please refer to the ISO catalogue for more details: http://www.iso.org/iso/home/store/catalogue_tc/catalogue_tc_browse.htm?commid=5013818

J.5 – IV&V AND CMS CERTIFICATION

Requirement ID	Requirement
EDWS-IVV-001	The Contractor shall provide the necessary information requested by the IV&V Contractor to assess the Contractor's Project Management capabilities to included, but not limited to: ➢ Progress against budget and schedule ➢ Risk management ➢ Adherence to the software development lifecycle (SDLC) ➢ Incorporation of the Seven Conditions and Standards into design and development ➢ Reflection of the Department's MITA goals and plans into actual design and development ➢ Configuration management is robust and includes Department or developer configuration audits against configuration baseline ➢ Change management ➢ Adherence to service-level agreements ➢ Project Work Plan comprehensiveness
EDWS-IVV-002	The Contractor shall provide the necessary information requested by the IV&V Contractor to assess the Contractor's System/Modular development capabilities including, but not limited to: ➢ Completeness and reasonability of MES concept of operations, architecture, and designs ➢ Accuracy of capture of interfaces and data sharing requirements with systems external to the MES ➢ Viability and completeness of the data transition plan ➢ Traceability of requirements through design, development, testing, and certification ➢ Adequacy of system security and privacy policies, plans, technical designs, and implementations ➢ Coverage and integrity of all system testing, including stress testing and testing of interfaces between modules and with external partner systems ➢ Capacity management, including consideration of future Contractors' support and release plans for underlying databases, software, and hardware ➢ Adequacy of disaster recovery planning
EDWS-IVV-003	The Contractor shall make available all systems related planning, design, development and implementation related activities, outputs, documentation, and test results in order to substantiate the solution meets related CMS certification checklist items as defined at the time of the review.
EDWS-IVV-004	The Contractor shall demonstrate the solution meets MITA 3.0 Framework guidelines regarding business, information, and technical requirements in addition to compliance with the Seven Conditions and Standards.

J.6 – AUDIT SUPPORT

Requirement ID	Requirement
EDWS-AUDIT-001	The Contractor shall provide DMAS, at a minimum, an annual report from its external auditor on effectiveness of internal controls. If the report discloses deficiencies in internal controls, the Contractor shall include management's corrective action plans to remediate the deficiency. The report shall be compliant with the AICPA Statement on Standards for Attestation Engagements (SSAE) No. 16, Reporting on Controls at a Service Organization, Service Organization Controls (SOC) 2, Type 2 Report.
EDWS-AUDIT-002	The Contractor, and each of its third-party service providers which provide a service that may impact the financial or program operations of DMAS, shall provide the SSAE 16 SOC 2 reports for its respective entity. The SSAE 16 audit reports shall be provided to DMAS's Internal Audit Division annually, no later than 30 days after the report is issued to the Contractor.
EDWS-AUDIT-003	The Contractor shall provide DMAS, at a minimum, an annual report from a qualified, independent, external IT security Contractor for a Vulnerability Assessment and Network Penetration Test covering all Contractor and subcontractor networks that will access State data and information.
EDWS-AUDIT-004	The Contractor shall provide the Department, at a minimum, a quarterly report of the results of its quarterly vulnerability scans covering all Contractor and subcontractor networks that will access State data and information.
EDWS-AUDIT-005	The Contractor shall provide the Department, at a minimum, a biennial report from an independent, external auditor on the Contractor's compliance with the State IT Information Security Standard SEC 501-09 (or latest). If the report discloses security deficiencies, the Contractor shall include management's corrective action plans to remediate the deficiency. The report shall be developed utilizing the requirements established in State IT Information Security Standard (SEC 501-09 or latest) and State IT Security Audit Standard (SEC 502-02.2 or latest).
EDWS-AUDIT-006	The Contractor and its subcontractors shall provide network connectivity for visitors from DMAS, Federal, and State auditors, including the execution of outside audit tools and audit test software for guest auditors from the U.S. Department of Health and Human Services (HHS) Office of the Inspector General, the HHS CMS Virginia Auditor of Public Accounts (APA) or any other authorized auditors as determined by DMAS.
EDWS-AUDIT-007	The Contractor shall produce robust audit trails and audit logs of all applications and engineering activities (including inquiry transactions) on the production systems. These audit logs will be kept available online, behind a front-end presentation toolset providing queries, reports, and analytics on any log selected. The system will be able to answer typical control questions required by COV SEC 501-09 and NIST 800-053 REV 4 (or latest) with online reporting. The DMAS Internal Audit Division and the Office of Compliance and Security shall provide the capability to access the audit logs directly without the Contractor's intervention. The logs shall be available to be reviewed by authorized Federal and COV auditors. Log retention shall be seven (7) years based on Library of Virginia standards.
EDWS-AUDIT-008	The Contractor shall establish policies, procedures, and practices to ensure there is appropriate internal monitoring of the audit logs and the established process produces documentation to evidence the monitoring effort.

Requirement ID	Requirement
EDWS-AUDIT-009	The Contractor shall provide DMAS, the U.S. Department of Health and Human Services (HHS) Office of the Inspector General, the HHS CMS, the Auditor of Public Accounts, and any other State and Federal auditors, or any of their duly authorized representatives with access to Contractor facilities for the purposes of audit, review, or physical inspection of system assets and system security, and access to any books, annual reports, management's report on internal control over financial reporting, SSAE No. 16 Service Organization Controls audit reports, fee schedules, documents, papers, and records of the Contractor and any of its subcontractors. Access to records includes any records which are stored offsite. Records shall be provided for review at no cost to the Department.
EDWS-AUDIT-010	The Contractor shall provide DMAS, the U.S. Department of Health and Human Services (HHS) Office of the Inspector General, the HHS CMS, State and Federal auditors, or any of their duly authorized representatives, access to inspect, copy, and audit contractor documents, including, medical and/or financial records of the Contractor and its subcontractors.
EDWS-AUDIT-011	The Contractor shall retain all records and reports relating to this Contract for a period of six years after final payment are made under this Contract or in the event that this Contract is renewed six years after the final payment. When an audit, litigation, or other action involving or requiring access to records is initiated prior to the end of said period, however, records shall be maintained for a period of six years following resolution of such action or longer if such action is still ongoing. Copies on microfilm or other appropriate media of the documents contemplated herein may be substituted for the originals provided that the microfilming or other duplicating procedures are reliable and are supported by an effective retrieval system which meets legal requirements to support litigation, and to be admissible into evidence in any court of law.
EDWS-AUDIT-012	The Contractor shall provide the Department with timely responses and corrective action plans (CAPs) for any audit or review findings, and shall ensure that any and all of its subcontractors also comply. In addition, the Contractor shall provide quarterly status updates for each CAP until the CAP is complete and the finding is remediated.
EDWS-AUDIT-013	The Contractor shall comply, and shall ensure any and all subcontractors comply with the following COV Information Security Standards (available on the VITA website), which among other requirements includes development and or performance of risk assessments, system security plans, disaster recovery plans, continuity of operations plans, and security audits: COV SEC 501-09 (or latest) IT Information Security Standard, COV SEC 502-02.2 (or latest) IT Security Audit Standard, COV SEC 514-03 (or latest) Removal of State Data from Electronic Media Standard, COV SEC 520-00 (or latest) IT Risk Management Standard, COV SEC 525-01 Cloud-Based Information Security Standard (Pending its release in 2016).
EDWS-AUDIT-014	The Contractor shall not have the right to audit DMAS, or require that DMAS be audited.
EDWS-AUDIT-015	The Contractor shall provide Control Policy and Procedures required by the Agency to develop, disseminate, and review/update annually, formal documented procedures. The Contractor shall also provide a Security Roles-based Report that can be used as evidence to validate access control policy on an annual basis. (SEC501-09 Section 8.1.AC-1).

Requirement ID	Requirement
EDWS-AUDIT-016	The Contractor shall provide Control Policy and Procedures to disable unneeded accounts in a timely manner as well as historical records of such actions. (SEC 501.9 Section 8.1-AC-2-COV 1.b).
EDWS-AUDIT-017	The Contractor shall conduct and document a risk assessment of each IT system classified as sensitive at least once every three years. The risk analysis shall address all of the requirements in the Security Standard and include an analysis of encryption/decryption mechanisms pertaining to PHI data at rest or in transition. (SEC 501.9 Section 6.2).
EDWS-AUDIT-018	The Contractor shall maintain and document a system for Risk Management which is compliant with the COV IT Risk Management Standard (SEC 520-00 or latest) published by VITA. The intent of this requirement is to ensure the Contractor establishes a risk management framework, setting a baseline for information risk management activities for the Contractor. These risk management activities include, but are not limited to, any regulatory requirements that the Contractor is subject to, information security best practices, and the requirements defined in this Standard. These risk management activities will provide identification of sensitive system risks, their associated business impact, and a remediation/recommendation strategy that will help mitigate risks to the Contractor's information systems and data and the State's information systems and data. The Risk Management Framework aligns with the methods set forth by the National Institute of Standards and Technology (NIST) Framework for Improving Critical Infrastructure Cybersecurity.
EDWS-AUDIT-019	The Contractor shall process a documented request with supervisory approval to establish an account on IT systems. In addition, the Contractor shall notify the Agency System Administrator in a timely manner about termination and/or transfer of employees and contractors with access rights to IT systems and data. (SEC501.9 Section 8.1.AC-2 COV 2).
EDWS-AUDIT-020	The Contractor shall provide and require encryption for the transmission of email and attached data that is sensitive relative to confidentiality. (SEC501.9 Section 8.16.SC-8-COV).
EDWS-AUDIT-021	The Contractor shall, annually, support the Agency and review of user accounts and privileges. (SEC501-09 Section 8.1.AC-2(j)).
EDWS-AUDIT-022	The Contractor shall support at least two Agency individuals to have administrative accounts to provide continuity of operations. (SEC501-09 Section 8.1.AC-2-COV 1 (h)).
EDWS-AUDIT-023	The Contractor shall provide evidence of document management practices for administering accounts. (SEC501 -09 Section 8.1 AC-2-COV).

J.7 – TURNOVER

Requirement ID	Requirement
EDWS-TRNOVR-001	The Contractor shall provide a Turnover Plan within 30 days of the Turnover Notification Letter. The plan shall include: ➢ Data Turnover tasks ➢ Custom interface Turnover tasks ➢ Reusable code Turnover tasks ➢ Documentation regarding files, interfaces, and work flows not considered to be part of the COTS proprietary documentation tasks ➢ A timeline with milestones for the Turnover to include planning, execution, and implementation approval
EDWS-TRNOVR-002	The Contractor shall carry out an orderly, cooperative, comprehensive, and controlled transition to the Department.
EDWS-TRNOVR-003	The Contractor shall provide a security profile of Department users in a Microsoft Word document or Microsoft Excel spreadsheet format.
EDWS-TRNOVR-004	The Contractor shall provide Turnover deliverables as part of the Turnover tasks to include: ➢ All files and data ➢ Reusable code Turnover ➢ Customized ad-hoc reporting specifications ➢ Documentation regarding files, interfaces, and work flows not considered to be part of the COTS proprietary documentation ➢ A timeline with milestones and a work breakdown structure for the Turnover to include planning, execution, and implementation approval ➢ A description of post turnover support for up to 6 weeks

J.8 – SEVEN CONDITIONS AND STANDARDS

Requirement ID	Requirement
EDWS-SCS-001	The Contractor shall comply and consistently meet or exceed the CMS Seven Conditions and Standards over the life of the contract.
EDWS-SCS-002	Modularity Standard - The Contractor shall demonstrate the use of a modular, flexible approach in its solution. This approach shall describe the modularity within its Solution including, but not limited to: ➢ Use of a Systems Development Life Cycle Methodology (SDLC) ➢ Identification of the modules within the solution and a description of the attributes that make them modular ➢ Identification and description of open interfaces ➢ Use of standardized business rule definitions and engines

Requirement ID	Requirement
EDWS-SCS-003	MITA Condition: The Contractor shall support the following if required: ➢ Conducting MITA Self Assessments ➢ Developing MITA Roadmaps ➢ Developing Concept of Operations (COO) and Business Process Models (BPM)
EDWS-SCS-004	Industry Standard Condition - The Contractor shall ensure alignment with, and incorporation of, industry standards, including but not limited to: the Health Insurance Portability and Accountability Act of 1996 (HIPAA) security, privacy and transaction standards; accessibility standards established under section 508 of the Rehabilitation Act, or standards that provide greater accessibility for individuals with disabilities, and compliance with Federal Civil Rights laws; standards adopted by the Secretary under section 1104 of the Affordable Care Act; and standards and protocols adopted by the Secretary under section 1561 of the Affordable Care Act. The Contractor shall describe and provide examples of how the solution provides the following capabilities: ➢ Inclusion of industry standards ➢ Incorporation of industry standards in requirements, development, and testing phases
EDWS-SCS-005	Leverage Condition - The Contractor shall work with DMAS to promote implementation of COTS packages or SaaS, and share, leverage, and identify possibilities for reuse of Medicaid technologies and systems within and among States, including but not limited to: ➢ Multi-state efforts ➢ Availability for reuse ➢ Identification of open source, cloud-based, and commercial products ➢ Customization ➢ Transition and retirement plans
EDWS-SCS-006	Business Results Condition - The Contractor shall support accurate and timely processing of claims, assignment of member eligibility benefits, adjudications, and effective communications with providers, members, and the public. The Contractor shall provide examples of how its solution accomplishes this condition, including but not limited to: ➢ Degree of automation ➢ Web-based Customer Service ➢ Performance standards and testing

Requirement ID	Requirement
EDWS-SCS-007	Reporting Condition - The Contractor's solution shall produce transaction data, reports, and performance information that contribute to program evaluation, continuous improvement in business operations, transparency, and accountability. The Contractor shall provide examples of meeting this requirement including, but not limited to: ➢ Accurate data ➢ Interfaces with designated federal repositories or hubs ➢ Automatic generation of reports ➢ Audit trails
EDWS-SCS-008	Interoperability Condition - The Contractor's solution shall provide seamless coordination and integration with appropriate exchanges including but not limited to HIE and HIX, and any run by the state or federal government, and allow interoperability with health information exchanges, public health agencies, human services programs, and community organizations providing outreach and enrollment assistance services. The Contractor shall describe and present examples of how the solution provides the following capabilities: ➢ Interactions with exchanges ➢ Interactions with other entities ➢ Use standard messaging, protocols and architecture

J.9 – Security/Compliance Audit

Requirement ID	Requirement
EDWS-SSDR-SAD-001	The Solution shall support encryption at rest for all relational database items.
EDWS-SSDR-SAD-002	The Solution shall require all relational database(s) to enforce Transport Layer Security (TLS 1.2 or above) for all incoming database connections.
EDWS-SSDR-SAD-003	The Solution requires a minimum of 256 bit encryption (AES preferred).
EDWS-SSDR-SAD-004	The Solution utilized to encrypt the database shall include security that contains encryption keys to be a minimum of 2048 bits.
EDWS-SSDR-SAD-005	The Solution utilized to encrypt the database requires methods used by relational databases to be FIPS-140-2 certified or higher.
EDWS-SSDR-SAD-006	The Solution utilized to encrypt the database requires methods used by relational databases to be common criteria certified.
EDWS-SSDR-SAD-007	The Contractor shall provide a Security Plan which will be in compliance with all State and Federal enterprise information security policies, standards, security initiatives, and regulations.
EDWS-SSDR-SAD-008	The Contractor shall provide a security solution which complies with VITA Information Security Standard Regulation SEC 501-09 or latest (SEC501-09 is updated annually and is based on NIST 800-53 v.4).

Requirement ID	Requirement
EDWS-SSDR-SAD-009	The Solution shall ensure that all data considered to be Protected Health Information (PHI) is secured while in transit and at rest (via encryption or an industry standard method of secure file transport). Data shall be stored in the continental United States.
EDWS-SSDR-SAD-010	The Contractor shall provide guest network connectivity from its offices and facilities during the life of the contract, at the Contractor's expense. This can be guest Wi-Fi or some other DMAS approved method. Requested guest accounts will be provisioned within twenty four (24) hours.
EDWS-SSDR-SAD-011	The Contractor shall collaborate and provide significant participation in support of the development and annual maintenance of the CMS System Security Plan (SSP).
EDWS-SSDR-SAD-012	The Solution shall provide the capacity to manage the creation of unique and permanent User ID's across multiple systems.
EDWS-SSDR-SAD-013	The Solution shall provide the capability for the provisioning of all MES accounts through the use of federated lists of tables.
EDWS-SSDR-SAD-014	The Solution shall have the functionality to allow for automated password resets using industry standard algorithms.
EDWS-SSDR-SAD-015	The Solution's password complexity shall require the use of all four of the following characteristics: Upper Case, Lower Case, Special Characters, and Numbers.
EDWS-SSDR-SAD-016	The Solution's passwords shall be a minimum of 12 characters in length and expire every 42 days.
EDWS-SSDR-SAD-017	The Contractor shall ensure the Solution integrates with a central ICAM/SSO using web services.
EDWS-SSDR-SAD-018	The Contractor shall ensure the Solution provides an authorization system and workflow for setting up user roles/access levels.
EDWS-SSDR-SAD-019	The Contractor shall provide coordination between role-based contractor solutions that include DMAS user roles and the central ICAM/SSO during implementation/setup of access control components.
EDWS-SSDR-SAD-020	The Contractor shall provide coordination between role-based contractor solutions which include DMAS roles and the central ICAM/SSO for external testing.
EDWS-SSDR-SAD-021	The Contractor shall provide coordination and support during the mapping of current roles (such as VAMMIS ACF2 roles) into applicable contractor solution roles for DMAS users.
EDWS-SSDR-SAD-022	The Contractor shall ensure the Solution provides role-based security and audit capabilities relative to the ICAM/SSO.
EDWS-SSDR-SAD-023	The Contractor shall ensure the user role/access level identifiers are continually in synch with the authorization system.

J.10 – MES SSO Global Security

Requirement ID	Requirement Description
EDWS-MES-SSO-GLBL-001	The Contractor shall provide a detailed integration, implementation plan on how the solution shall integrate with a central SSO using its web services.
EDWS-MES-SSO-GLBL-002	The Contractor shall provide a detailed plan on the implementation of authorization system's workflow to set up user roles/access levels.
EDWS-MES-SSO-GLBL-003	The Contractor shall provide an authorization solution that shall support the MES SSO concept.
EDWS-MES-SSO-GLBL-004	The Contractor shall provide a coordination effort plan, detailing the efforts required between role-based contractor solutions that include DMAS user roles and the central SSO during implementation/setup of access control components.
EDWS-MES-SSO-GLBL-005	The Contractor shall provide an integration and implementation plan that requires co-ordination between role-based contractor solutions that include DMAS roles and the central SSO for external testing.
EDWS-MES-SSO-GLBL-006	The Contractor shall provide the coordination and support plans during the mapping of current roles (such as mainframe MMIS ACF2 roles) into applicable contractor solution roles for DMAS users.
EDWS-MES-SSO-GLBL-007	The Contractor shall implement a solution's role-based security and its audit capability relative to the SSO.
EDWS-MES-SSO-GLBL-008	The Contractor shall keep the user role/access level identifiers in synch with the authorization system.

J.11 – Integration Services

Requirement ID	Requirement
EDWS-IS-001	The Contractor shall facilitate the secure exchange of data with other applications in the MES within the agreed upon SLA through synchronous real time web services and/or asynchronous services using Queues through an Integration service.
EDWS-IS-002	The Contractor shall have the ability to produce/consume SOAP, RESTful Web Services.
EDWS-IS-003	The Contractor shall have the ability to exchange files through secure file transfer protocol with other systems through an Integration service.

J.12 – Rules Engine

Requirement ID	Requirement
EDWS-RULE-EGN-001	The Contractor's Rules Engine shall meet MITA 3.0 standards by using COTS Business Rules Engine products using BPMN and BPEL methodologies.
EDWS-RULE-EGN-002	The Contractor's Rules Engine shall allow integration with Identity Access Management products for several elevated user levels for business rules approvals.

Requirement ID	Requirement
EDWS-RULE-EGN-003	The Contractor's provided workflow shall automate details for any rules creation/modification/deletion and scheduled auto deployment shall be explained.
EDWS-RULE-EGN-004	The Contractor's Rules Engine shall provide a testing environment with dashboard drill downs using past production data to show how functionality/end result will change by the rule changes. This can be displayed in the dashboard by a graphical and columnar view for easy impact assessment by the business user.
EDWS-RULE-EGN-005	The Contractor shall provide a Rules Engine Business Dictionary which includes data elements, definition, data size, meaning, description and its usage.
EDWS-RULE-EGN-006	The Contractor's Rules Engine shall allow changes to be made to the valid values without bringing down the rules engine.
EDWS-RULE-EGN-007	The Contractor's Rules Engine shall have tracking mechanisms to identify which rules are executed for the particular transactions.
EDWS-RULE-EGN-008	The Contractor's Rules Engine shall be able to produce a report on rules passed or failed for all transactions.
EDWS-RULE-EGN-009	The Contractor's Rules Engine shall send alerts to the appropriate resource if there is any issue in the rules engine.
EDWS-RULE-EGN-010	The Contractor's Rules Engine shall allow logging to be turned ON or OFF.
EDWS-RULE-EGN-011	The Contractor's Rules Engine shall provide a debugging tool to debug the rules execution.
EDWS-RULE-EGN-012	The Contractor's Rules Engine shall allow rules to run sequentially and in parallel.
EDWS-RULE-EGN-013	The Contractor's Rules Engine shall allow Individual rules testing features available.
EDWS-RULE-EGN-014	The Contractor's Rules Engine shall include test data creation tools.
EDWS-RULE-EGN-015	The Contractor's Rules Engine shall allow users to map JSON or XML documents as input data elements.
EDWS-RULE-EGN-016	The Contractor's Rules Engine shall be easily accessed through Java or web services.
EDWS-RULE-EGN-017	The Contractor's Rules Engine shall process high volume transactions and shall be scalable.
EDWS-RULE-EGN-018	The Contractor's Rules Engine shall be able to support NoSQL or MongoDB.
EDWS-RULE-EGN-019	Rules Editor shall allow the subject matter experts or technical resource to write the rules in the natural language.
EDWS-RULE-EGN-020	The Contractor shall supply a dashboard to monitor the rules execution and its performance and statistics.
EDWS-RULE-EGN-021	The Contractor's Rules administration process shall control user access, modify and execute the rules.

J.13 – WORKFLOW

Requirement ID	Requirement
EDWS-WF-001	The Contractor's workflow management tool shall support the intelligent assignment, queueing, notification, escalation and management of requests, interactions and relationships with providers, members, and other stakeholders.
EDWS-WF-002	The Contractor's workflow management tool shall be easily configurable.
EDWS-WF-003	The Contractor's workflow management tool shall support notifications and alerts using a variety of access channels that can be managed by authorized users.
EDWS-WF-004	The Contractor's workflow management tool shall have the capability to schedule the execution of tasks.
EDWS-WF-005	The Contractor's workflow management tool shall be able to track and monitor the progress of the execution of the workflows.
EDWS-WF-006	The Contractor's workflow management tool shall have the ability to prioritize the tasks based on the severity.
EDWS-WF-007	The Contractor's workflow management tool shall be fault tolerant.
EDWS-WF-008	The Contractor's workflow management tool shall provide ability to view the workflow execution history.
EDWS-WF-009	The Contractor's workflow management tool shall have user defined reporting capabilities to assist in managing caseloads, workflow processes, and quality assurance.

J.14 – PORTAL

Requirement ID	Requirement
EDWS-TECH-WEB-001	All Contractor websites shall comply with section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794d) and meet the standards published in the Federal Register on December 21, 2000 (36 CFR Part 1194).
EDWS-TECH-WEB-002	All Contractor website components used to publish or create content or user accessible interfaces shall comply with the Authoring Tool Accessibility Guidelines (ATAG) 2.0 as published by the Worldwide Web Consortium (W3C).
EDWS-TECH-WEB-003	All Contractor website components or content accessed via a Web Browser shall comply with Virginia web standards as published at: http://www.vita.virginia.gov/library/default.aspx?id=663
EDWS-TECH-WEB-004	The Contractor's online help shall be available and provide current and accurate information. Online Help shall be content sensitive to the extent possible. The format and structure of online help shall be approved by DMAS.
EDWS-TECH-WEB-005	All Contractor website components or content accessed via a Web Browser shall meet the W3C Web Content Accessibility Guidelines (WCAG) V2.0.
EDWS-TECH-WEB-006	All Contractor websites shall support human-readable URLs which are usable as navigational aids to end users.

Requirement ID	Requirement
EDWS-TECH-WEB-007	All Contractor websites shall be accessible using common major web browsers like, but not limited to Chrome, Firefox, IE, Edge, and Opera and shall be compatible with previous versions approved by DMAS.
EDWS-TECH-WEB-008	All Contractor websites shall be accessible using, but not limited to mobile devices, tablets and PC's.
EDWS-TECH-WEB-009	All Contractor's solution components or content accessed via a Web Browser shall comply with the W3C Mobile Web Application Best Practices as published on December 14, 2010.
EDWS-TECH-WEB-010	All Contractor websites shall support English, Spanish, and any other language that is used by 5% or more of the population.
EDWS-TECH-WEB-011	All Contractor website components or content accessed via a Web Browser shall display a dismissible alert when being accessed by a browser type or browser version that is not fully supported.
EDWS-TECH-WEB-012	All Contractor website components or content accessed via a Web Browser shall not use, nor have any dependencies on Active-X controls, Flash, Frames or iframes.
EDWS-TECH-WEB-013	For supported browsers, all Contractor websites shall print what the users see. The Solution shall provide options to print or download HTML and PDF documents.
EDWS-TECH-WEB-014	All Contractor websites shall include a knowledge based component and frequently asked questions.
EDWS-TECH-WEB-015	The Contractor shall ensure all browser run scripts load from website servers, unless approved otherwise by DMAS.
EDWS-TECH-WEB-016	The Contractor shall ensure all browser run scripts are verified only to communicate with websites, unless approved otherwise by DMAS.
EDWS-TECH-WEB-017	The Contractor shall ensure all browser run scripts use minified version in production.
EDWS-TECH-WEB-018	The Contractor shall ensure all websites are developed using current technologies including Angular JS, JavaScript, JQuery, and Bootstrap.
EDWS-TECH-WEB-019	The Contractor shall ensure all websites disallow multiple concurrent logins by an individual user or by a single user ID.
EDWS-TECH-WEB-020	The Contractor shall ensure all platforms supporting or hosting browser accessible components or content shall be scanned for known vulnerabilities no less frequently than once a month. Scan results shall be sent to DMAS Security Officer.
EDWS-TECH-WEB-021	The Contractor's websites shall be scalable to support growth in the number of Medicaid providers, members and for future growth of Medicaid program.
EDWS-TECH-WEB-022	The Contractor shall ensure users attempting to access a solution component or content that is unavailable due to scheduled maintenance shall receive a response notifying them of the reason for non-availability and an expected service resumption time.
EDWS-TECH-WEB-023	The Contractor shall ensure all website users are notified of any scheduled maintenance on the website's main page.

Requirement ID	Requirement
EDWS-TECH-WEB-024	The Contractor's websites shall adhere to the "Government Data Collection and Dissemination Practices Act" Code of Virginia, § 2.2-3800, "Administration of systems including personal information; Internet privacy policy; exceptions" Code of Virginia, § 2.2-3803, the "Virginia Freedom of Information Act" § 2.2-3700, et seq., and HIPAA regulations (Health Insurance Portability and Accountability Act (1996) (HIPAA).
EDWS-TECH-WEB-025	The Contractor shall ensure all solution components that are accessible from the Public Internet (e.g. websites) shall make the site's privacy policy and terms of service available prior to authentication.
EDWS-TECH-WEB-026	The Contractor shall ensure cookie dependencies for Solution components or content accessed via a web browser is limited to session cookies.
EDWS-TECH-WEB-027	The Contractor shall ensure any cookies generated, used, or required by the solution do not contain user identifiable data.
EDWS-TECH-WEB-028	The Contractor shall ensure users attempting to access a solution component or content that has a dependency on cookies with a browser that has cookies disabled shall receive a response notifying them of features, modules, or services that may not be available.
EDWS-TECH-WEB-029	The Contractor shall ensure website form fields are validated on the client side as well as on server side.
EDWS-TECH-WEB-030	The Contractor shall ensure fields have standard formats such as phone numbers, date, time, currency, numbers, SSN use input mask to aid users.
EDWS-TECH-WEB-031	The Contractor shall ensure users do not see technical implementation details in error messages on production system, e.g. 500 errors shall display a message such as "we are experiencing technical problems, please check back soon" with a link back to home page or the page they came from.
EDWS-TECH-WEB-032	The Contractor shall ensure the website provides the ability to upload multiple files and show end users the progress of the upload using, but not limited to JQUERY or Angular file upload plugin.
EDWS-TECH-WEB-033	The Contractor shall ensure the website can validate and scan for potential malware and viruses before uploading files to the secured area.
EDWS-TECH-WEB-034	The Contractor shall ensure the website provides live chat functionality for end user personnel to be connected with a customer service representative (site specific).
EDWS-TECH-WEB-035	The Contractor shall ensure the website provides auto call back technology. Auto call back shall be triggered based on the average wait time, the number of people in the queue, the current service level, or the current abandon rate to reduce the number of repeat callers and provide greater customer satisfaction (site specific).
EDWS-TECH-WEB-036	The Contractor shall ensure the website provides the ability for users to save data in heavily used forms as user specific templates for future submission (site specific).
EDWS-TECH-WEB-037	The Contractor shall ensure the website provides the ability for users to clone previously entered forms that are Department selected and approved (site specific).

Requirement ID	Requirement
EDWS-TECH-WEB-038	The Contractor shall ensure the website provides links for context sensitive referenced materials, e.g. materials from manuals, price lists, referenced materials (site specific).

J.15 – ELECTRONIC DATA INTERCHANGE

Requirement ID	Requirement
EDWS-EDI-001	For real-time submission, contractor shall ensure that the Unique ID that is assigned in the DMAS EDI Gateway will be tied to its backend process.
EDWS-EDI-002	For batch submissions, the Contractor shall ensure that the Unique File ID assigned in the DMAS EDI Gateway will be tied to its backend process.
EDWS-EDI-003	When connecting with the DMAS EDI Gateway, the Contractor shall ensure authorization and authentication is performed through the Commonwealth specified single sign-on system.
EDWS-EDI-004	The Contractor solution shall support all current and future applicable EDI standards, including but not limited to HIPAA transactions, versions, and code sets and all phases of CAQH/CORE operating rules.
EDWS-EDI-005	The Contractor shall ensure that data to support a HIPAA standard response is provided, including but not limited to the TA1, 999, 271, 277, 277CA, 820, and 834.
EDWS-EDI-006	The Contractor shall ensure all incoming and outgoing transaction data is logged and archived to support auditing, reporting, and other business needs.
EDWS-EDI-007	The Contractor shall provide archived data in response to a DMAS request in a timeframe to be determined based on the age of the data.
EDWS-EDI-008	The Contractor shall provide an automatic response when it is unable to process a real-time or batch transaction from the DMAS EDI Gateway.
EDWS-EDI-009	The Contractor shall ensure that all submitted transaction information metrics, including but not limited to (submitted timestamp, transaction size, user, IP, and port) are stored and accessible for problem resolution, reporting SLAs, and other business needs.
EDWS-EDI-010	The Contractor shall ensure an hourly EDI statistics email is sent to listed users.
EDWS-EDI-011	For real-time submission, the Contractor shall ensure unique UUID is assigned, and the ID is tied to the backend process.
EDWS-EDI-012	The Contractor shall ensure an alert is sent to the appropriate technical team regarding the system status.
EDWS-EDI-013	The Contractor shall ensure SLA reports are generated and include information such as amount of time it took to process the file, file rejection rate, and file acceptance rate.
EDWS-EDI-014	The Contractor shall ensure human readable format is produced for 999 and TA1.

Requirement ID	Requirement
EDWS-EDI-015	The Contractor shall ensure all the submitted file information is kept in the database for easy access (file submitted timestamp, file size, user, and so on).
EDWS-EDI-016	The Solution shall validate that a provider has identified a relationship with the service center and transaction ID as part of processing an EDI transaction.

J.16 – Documentation Management

Requirement ID	Requirement
EDWS-DOC-001	The Contractor shall capture all the incoming and outgoing documents in the repository with a unique ID, date, and timestamp.
EDWS-DOC-002	The Contractor shall include electronic documentation context sensitive help screens for all online functions (desktop and browser).
EDWS-DOC-003	The Documentation Management system shall provide full functionality for a robust Documentation Management system solution, including but not limited to: ➢ Web-based access ➢ Document storage ➢ Category meta-tagging ➢ Collaborative editing with version controls ➢ Workflow with automated notifications ➢ Integrate and interface with common desktop productivity software ➢ The ability to search among documents ➢ The ability to enter notes or annotate documents
EDWS-DOC-004	The Documentation Management system shall store all generated outputs, including but not limited to reports and letters.
EDWS-DOC-005	The Documentation Management system shall store all MES documentation, including but not limited to designs, manuals, and training materials.
EDWS-DOC-006	The Documentation Management system shall store all documents transmitted by internal and external sources, including but not limited to reports generated by other systems, faxes, and uploaded materials.
EDWS-DOC-007	The Documentation Management system shall store images of all hard-copy documents received including but not limited to paper claims, provider enrollment applications, service authorization requests, attachments, including attachments to claims, and correspondence.
EDWS-DOC-008	The Documentation Management system shall support the ability to retrieve and view all information stored, based on a variety of identifying information, including but not limited to report number, provider ID, letter ID, run date, as of date, payment date, RA number, check number, claim control number, and letter date.
EDWS-DOC-009	The Documentation Management system shall provide the ability to search within documents.

Requirement ID	Requirement
EDWS-DOC-010	The Documentation Management system shall provide the ability for users and applications to retrieve a document using a web-based application.
EDWS-DOC-011	The Documentation Management system shall provide the ability to print and download any document in total or part as defined by the user.
EDWS-DOC-012	The Documentation Management system shall manage access based on security rules defined for both internal and external users and systems.
EDWS-DOC-013	The Documentation Management system shall maintain an audit trail of all actions related to ECM content, including but not limited to: ➢ Date and time document is entered in the System ➢ Any actions taken on the document or attachment; including the date and time of the edits/modification ➢ Record the user responsible for the changes ➢ Record all user inquiries even if no action was taken by the user
EDWS-DOC-014	Audit trail reports shall be available on demand, both an aggregated report of all actions by type (inquiry, add, change, etc.) and by an individual user ID.
EDWS-DOC-015	The Documentation Management system shall provide a scalable environment with a separate testing/staging environment.
EDWS-DOC-016	The Documentation Management system shall convert and store the contents of the legacy ECM.
EDWS-DOC-017	The Documentation Management system shall support data retention and deletion in accordance with Department record retention policies.
EDWS-DOC-018	The Documentation Management system shall install and manage application-specific malware protection.
EDWS-DOC-019	The Documentation Management system shall deploy customizations (e.g., web parts and solutions) supplied by an Authorized User using server tools.
EDWS-DOC-020	The Documentation Management system shall provide all enterprise-level infrastructure hardware and software licensing required to support the services.
EDWS-DOC-021	The Documentation Management system shall continually evolve to stay contemporary with best of breed market offerings.
EDWS-DOC-022	The Contractor shall provide electronic documentation management capability that promotes automatic updates to the documentation when content, technical, and operational changes occur.
EDWS-DOC-023	The Contractor shall provide an electronic document management capability to link, track, and update all electronic documentation, technical and operational, when affected by a subsystem or component or business practice and rules requirement change.

Requirement ID	Requirement
EDWS-DOC-024	The Contractor shall provide the methodology to work with the Department to finalize the service level criteria for the following: ➢ Distinguishing the priority and severity of a problem ➢ Determining the category of the problem ➢ Establishing the nature of the problem
EDWS-DOC-025	The Contractor shall present instructions for requesting reports or other outputs with examples of input documents and replicas of screens (desktop and browser).
EDWS-DOC-026	The Contractor shall provide the ability to accommodate electronic signatures.
EDWS-DOC-027	The Contractor shall provide artifacts, including but not limited to reports, letters, documents, and documentation, for an Enterprise Content Management (ECM) system.

J.17 – Enterprise Data Warehouse

Requirement ID	Requirement
EDWS-GNRL-001	All Contractors and their partners, with no exceptions, shall have to accommodate sharing of enterprise relationship diagram of their system, data dictionaries, and business and technical metadata with DMAS.
EDWS-GNRL-002	The Contractors shall provide resources and services that provide access to their transactional data both in real-time and batch.
EDWS-GNRL-003	The Contractors shall provide functions to translate their data into XML, JSON, SOAP, etc., for exchange as required by DMAS.
EDWS-GNRL-004	The Contractors shall adhere to the frequency of data-exchange as desired by DMAS.
EDWS-GNRL-005	Each Contractor shall assure data quality pertaining to the benchmarks set forth by DMAS.
EDWS-GNRL-006	Any and all products generated by the Contractor during the course of MES and pertaining to MES shall be shared with DMAS.

J.18 – Conversion

Requirement ID	Requirement
EDWS-DATA-CON-001	The Contractor shall develop a Conversion Plan to successfully meet DMAS business and technical specifications for deployment.
EDWS-DATA-CON-002	The Conversion Plan shall include a description of the overall conversion strategy.
EDWS-DATA-CON-003	The Conversion Plan shall include a detailed conversion schedule.
EDWS-DATA-CON-004	The Conversion Plan shall include an outline of roles and responsibilities.
EDWS-DATA-CON-005	The Conversion Plan shall include pre-defined and mutually agreed upon success criteria and acceptable thresholds.

Requirement ID	Requirement
EDWS-DATA-CON-006	The Conversion Plan shall include a description of all tools to be used during the conversion process.
EDWS-DATA-CON-007	The Conversion Plan shall include methods for user validation of converted data.
EDWS-DATA-CON-008	The Conversion Plan shall include procedures for tracking and correcting conversion problems when encountered.
EDWS-DATA-CON-009	The Conversion Plan shall include a process to identify and mitigate risks that may be encountered during conversion.
EDWS-DATA-CON-010	The Conversion Plan shall include the target data store schemas.
EDWS-DATA-CON-011	The Conversion Plan shall include detailed data element mappings, including values of the old systems data elements to the new systems data elements, new data elements to old data elements, and default values where necessary.
EDWS-DATA-CON-012	The Conversion Plan shall include specifications for manually converting unreliable data elements that cannot be converted.
EDWS-DATA-CON-013	The Conversion Plan shall include referential integrity relationships for related data.
EDWS-DATA-CON-014	The Conversion Plan shall define the reporting of processing statistics that include, but are not limited to, load execution time and duration.
EDWS-DATA-CON-015	The Conversion Plan shall define the reporting of failures, error conditions, and unexpected terminations.
EDWS-DATA-CON-016	The Conversion Plan shall include a definition of the metrics that will be generated by the conversion process to measure the completeness of conversion. These metrics shall include record counts and balancing for each major grouping of data elements from both the legacy source systems (e.g., number of members, cases, claims, and claims paid).
EDWS-DATA-CON-017	The Conversion Plan shall include layouts, procedures, and schedules for all conversion reporting.
EDWS-DATA-CON-018	The Conversion Plan shall include transformation and loading for each data source.
EDWS-DATA-CON-019	The Conversion Plan shall include a strategy for data quality assurance and control.
EDWS-DATA-CON-020	The Conversion Plan shall include an inventory and cross-reference of: Source and target data elements, schema, and metadata.
EDWS-DATA-CON-021	The Conversion Plan shall include a process for data extraction.
EDWS-DATA-CON-022	The Conversion Plan shall describe all preparatory and/or initiation processes that shall be completed prior to conversion.
EDWS-DATA-CON-023	The Conversion Plan shall identify if the conversion process will be implemented in phases or stages, and which components will undergo conversion in each phase.
EDWS-DATA-CON-024	The Conversion Plan shall describe the process for converting reports and imaged documents.

Requirement ID	Requirement
EDWS-DATA-CON-025	The Conversion Plan shall identify what data related to specific business processes will be converted first.
EDWS-DATA-CON-026	The Conversion Plan shall identify and describe any part of the conversion process that will be performed manually.
EDWS-DATA-CON-027	The Conversion Plan shall identify and describe any custom-developed conversion programs that will be needed and their associated performance tuning.
EDWS-DATA-CON-028	The Conversion Plan shall describe all conversion reporting, control, and balancing outputs.
EDWS-DATA-CON-029	The Conversion Plan shall define the metrics that will be generated by the conversion process to measure the completeness of conversion.
EDWS-DATA-CON-030	The Conversion Plan shall identify criteria for a Go/No-Go decision.
EDWS-DATA-CON-031	The Conversion Plan shall identify a staffing approach.
EDWS-DATA-CON-032	The Conversion Plan shall identify if parallel runs of the old and new systems will be necessary during the conversion process, or if there will be a one-time cut-over to the new system.
EDWS-DATA-CON-033	The Conversion Plan shall identify whether data availability and use shall be limited during the conversion process.
EDWS-DATA-CON-034	The Conversion Plan shall describe security and privacy controls required for the conversion process.
EDWS-DATA-CON-035	The Conversion Plan shall describe the disposition of obsolete or unused data that is not converted.
EDWS-DATA-CON-036	The Conversion Plan shall identify a retention policy for the non-converted data in case of fallback with a need to rerun the conversion process.
EDWS-DATA-CON-037	The Contractor shall submit the Conversion Plan for DMAS review and approval.
EDWS-DATA-CON-038	The Contractor shall provide a walk-through of the Conversion Plan before submitting to DMAS for approval.
EDWS-DATA-CON-039	The Contractor shall document any revised procedures in the Conversion Plan.
EDWS-DATA-CON-040	The Contractor shall execute the approved Conversion Plan according to the project schedule.
EDWS-DATA-CON-041	The Contractor shall convert all historical and transactional data stores that are needed by and applicable to the solution.
EDWS-DATA-CON-042	The Contractor shall convert all images and other document types that are needed by and applicable to the solution.
EDWS-DATA-CON-043	The Contractor shall store and manage specified historical data covering a specified time.
EDWS-DATA-CON-044	The Contractor shall provide hardware, software, and data support for the Department during all phases of conversion.

Requirement ID	Requirement
EDWS-DATA-CON-045	The Contractor shall supply appropriate environments for developing and testing conversion processes.
EDWS-DATA-CON-046	The Contractor shall provide the capability for storing all conversion-related artifacts in an easily retrievable format for access by DMAS for the life of the contract.
EDWS-DATA-CON-047	The Contractor shall ensure all data is protected with access restricted to authorized personnel.
EDWS-DATA-CON-048	The Contractor shall provide the converted data to other DMAS users and/or contractors as required for its processing needs as identified by the Department.
EDWS-DATA-CON-049	The Contractor shall present a conversion walk-through with Department users, displaying resulting output data in screens of the new MES.
EDWS-DATA-CON-050	The Contractor shall submit all conversion reports as defined in the Conversion Plan to the Agency for review and approval.
EDWS-DATA-CON-051	The Contractor, under DMAS guidance, shall be responsible for identifying and obtaining any data that is required for its solution but not present in VAMMIS.

J.19 – HARDWARE

Requirement ID	Requirement
EDWS-FR-HDW-001	The Contractor shall provide two cost proposals relative to the hosting of the EDWS appliance/hardware. Option #1: The first option is that the hardware will be hosted by VITA. Option #2: The second option is the hosting hardware will be determined by the Contractor. The Contractor will provide details of the solution and the location of data. DMAS's preference is to host hardware in VITA and receive support from the contractor for set up. The intent is to co-locate with SAS servers at VITA to avoid latency issues. In both options, the Contractor will ensure that the solution would provide equal or better performance utilizing the SAS analytics platform that is hosted in VITA (CESC) Chesterfield, VA. The Contractor is required to comply with VITA IT and Security standards and meet DMAS approved SLAs. Please refer 3.b.7 Service Requirements section for additional information.
EDWS-FR-HDW-002	The Contractor shall provide a solution with simplicity and ease of development and deployment, with minimum/No assembly required, easy integration of hardware, software and storage with shorter deployment cycles and faster time to value.
EDWS-FR-HDW-003	The Contractor shall provide recommended approach to deliver high performance out of the box hardware solution. DMAS prefers an appliance with minimum/no indexing or tuning capabilities.
EDWS-FR-HDW-004	The Solution shall integrate with leading ETL, EDWS and analytic applications through standard ODBC, JDBC and OLE DB interfaces.

Requirement ID	Requirement
EDWS-FR-HDW-005	The Contractor shall provide a pre-integrated and tested server, storage, database and built-in analytics capabilities designed, integrated and tuned for high performance analytics.
EDWS-FR-HDW-006	The Contractor shall provide an asymmetric, massively parallel processing architecture that supports large volumes of data.
EDWS-FR-HDW-007	The Contractor shall provide in-database analytics functions which can support analysis where the data resides to eliminate costly data movement and yielding high performance.
EDWS-FR-HDW-008	The Contractor shall provide in-database geospatial analytics which correlate transactional information to a location, enhancing applications such as fraud detection and population healthcare analytics.
EDWS-FR-HDW-009	The Contractor shall provide in-database SAS execution to improve speed and reliability.
EDWS-FR-HDW-010	The Contractor shall provide the ability to manage and monitoring performance and activity.
EDWS-FR-HDW-011	The Contractor shall provide ability to manage security credentials and policies for system and database users with a three dimensional security model.
EDWS-FR-HDW-012	The Contractor shall provide ability to configure and authenticate users in one of two ways: ➢ A Local Authentication ➢ An Active Directory Authentication (ADA)
EDWS-FR-HDW-013	The Contractor shall provide minimum/ no disruption in service when increasing capacity through modification of hardware configuration.
EDWS-FR-HDW-014	The Contractor shall optimize execution of SAS, ESRI and other mathematical functions in the appliance, delivering high performance.
EDWS-FR-HDW-015	The Contractor shall not share any data without permission as DMAS owns all the data.
EDWS-FR-HDW-016	The Agency shall have the ability to add any additional networking hardware or increase network throughput without affecting downtime.

J.20 – TABLEAU SERVER

Requirement ID	Requirement
EDWS-FR-TBL-001	The Contractor shall provide the details for supporting Tableau Server or choose to recommend an alternative BI Solution. If an alternative is recommended, the Contractor shall describe the benefits of using the contractors alternatively proposed Solution and describe how they will transition DMAS to the new Solution.
EDWS-FR-TBL-002	The Contractor shall be required to respond to licensing requirements for up to 200 concurrent users and 30 authors/dashboard designers, in two ways: ➢ Per-named-user-basis ➢ Core license

Requirement ID	Requirement
EDWS-FR-TBL-003	The Contractor shall be expected to provide configurable tools for system administration, including access rights, scheduling, and notifications designed for enterprise environments that require various levels of data security.
EDWS-FR-TBL-004	The Contractor shall be required to provide service that will configure the Tableau server to authenticate users in one of two ways: ➢ Local Authentication ➢ Active Directory Authentication Permissions can be applied to specific views within a workbook or at the entire workbook level.
EDWS-FR-TBL-005	The Contractor shall provide easy access and easy configurability to the platform's capabilities.
EDWS-FR-TBL-006	The Contractor shall ensure that the platform will enable data-driven decision making across the agency and deliver self-service analytics at scale with high availability.
EDWS-FR-TBL-007	The Contractor shall ensure that the platform provides administration tools that are easily configurable.
EDWS-FR-TBL-008	The Contractor shall ensure that the server architecture is scalable from a single server to large multi-server deployments.
EDWS-FR-TBL-009	The Contractor shall monitor the performance and activity on the Tableau server and manage those attributes for optimal performance.
EDWS-FR-TBL-010	The Contractor shall provide set-up to support the following web browsers: ➢ MS Windows IE 9, IE 10, IE 11, or later; Mozilla Firefox 3.6 or later ➢ Linux Mozilla Firefox 3.6 or later
EDWS-FR-TBL-011	The Contractor shall recommend the operating system to support the Tableau platform.
EDWS-FR-TBL-012	The Contractor shall recommend hardware specification for asynchronous data loading, e.g., cluster size, RAM, CPU, Hard disk capacity, network capability.
EDWS-FR-TBL-013	The Contractor shall recommend minimum hardware specifications for the database host: Cluster size, Number of Hosts, RAM, CPU, Hard disk capacity, Network capacity.
EDWS-FR-TBL-014	The Contractor shall provide installation services and adhere to VITA standards.
EDWS-FR-TBL-015	The Contractor shall provide cost structure for maintenance for 1 year, 2 years, and 3 years after installation.
EDWS-FR-TBL-016	The Solution shall support connecting to any Web Map Service and support geo coding and display your data on a map.
EDWS-FR-TBL-017	The Contractor shall provide fundamental and advanced training and provide comprehensive documentation.
EDWS-FR-TBL-018	The Contractor shall be required to collaborate with other MES contractors when requested by DMAS.

J.21 – DATA MODELING

Requirement ID	Requirement
EDWS-FR-MOD-001	The Contractor's EDWS shall be generated from either the Atomic Warehouse Model or the Dimensional Warehouse Model.
EDWS-FR-MOD-002	The Contractor's Methods/techniques shall be used to drive the specification of specific analytical requirements.
EDWS-FR-MOD-003	The Contractor's model shall support standard domains, e.g., HL7 2.5, X12, SNOMED, LOINC, RxNorm, ICD-9/ICD-10.
EDWS-FR-MOD-004	The Contractor's Data Model tool shall perform the following tasks: ➢ Build a logical data model ➢ Build a physical data model based on the logical one ➢ Create DDL from the physical data model ➢ Build one or more reports that help effectively describe and share the model with others, including business users ➢ Present the model in a variety of easy-to-analyze view with capabilities to make the overall look of the model visually appealing
EDWS-FR-MOD-005	The Contractor's Data modeling tools shall: ➢ Be flexible and have the ability to interchange with other tools (example Metadata Interchange with Other Tools) ➢ Include a strong set of documentation and online resources, and ➢ Feature an intuitive, well-designed user interface ➢ Provide editor function that enables users to quickly view and easily update with multiple object types, or multiple properties
EDWS-FR-MOD-006	The Contractor's Data Mart structure development shall be driven from the Dimensional Warehouse Model. This layer within the architecture shall be used to manage the data marts and OLAP cubes as needed to meet the requirements of DMAS. The data marts shall use accelerators to provide faster time to market information based on subject areas needed within DMAS including Cohort Analysis.
EDWS-FR-MOD-007	The Contractor's Independent data mart architecture shall be embraced to share data externally. Stand-alone data marts that are controlled by a particular workgroup, department, or line of business and built solely to meet their needs will be required to control access to sensitive data.
EDWS-FR-MOD-008	The Solution's EDWS and data mart shall structure the data in a way that would provide the fastest and easiest access to the data and supports different levels of data analysis including: ➢ Display: Querying and reporting ➢ Analyze: Multidimensional Analysis ➢ Discover: Data Mining and advanced statistical analysis
EDWS-FR-MOD-009	The Contractor's data model shall be Multi-Tenant enabled at all layers.

Requirement ID	Requirement
EDWS-FR-MOD-010	The Contractor shall provide a data model and a data warehouse solution that addresses data and business process needs of the agency as mentioned in section 3.b.2 Business Area Support, including but not limited to: ➢ Standardize data using MITA standards ➢ Increase accuracy and consistency of data ➢ Increase accessibility through improved standards ➢ Store and track data in a centralized location ➢ Develop and implement business rules to increase accuracy and consistency ➢ Develop procedures and standards to ensure quality improvement and cost management ➢ Develop standards that comply with Federal/State defined data standards ➢ Develop and implement standards for electronic interchanges ➢ Create automated workflows ➢ Develop processes that increase efficiency and completion timeframes ➢ Increase coordination, consistency, and communication at all stages
EDWS-FR-MOD-011	The Contractor shall provide a data model which meets the non-functional requirements described in section 3.b.6.
EDWS-FR-MOD-012	The Contractor shall provide a data model which meets the data modeling requirements mentioned in section 3.b.7 Service Requirements.

J.22 – Data Integration

Requirement ID	Requirement
EDWS-FR-DI-001	The Contractor shall provide a landing and temporary processing area for all new enterprise data for the EDWS Data Staging.
EDWS-FR-DI-002	The Contractor's Data Acquisition Service shall provide efficient, timely access to source data from all relevant operational systems.
EDWS-FR-DI-003	The Solution shall provide Middleware compatibility which includes: compatibility with industry leading data, application, and messaging middleware.
EDWS-FR-DI-004	The Solution shall provide recovery of integration after failure, having the ability to successfully roll back a transaction, regardless of size or distribution.
EDWS-FR-DI-005	The Solution shall provide Performance Monitoring including the ability to see performance metrics of executing processes without degradation.
EDWS-FR-DI-006	The Solution shall provide the ability to resolve semantic and context conflicts between numerous data sources.
EDWS-FR-DI-007	The Solution shall provide Synchronization and Data Replication including the ability to accurately reflect data changes in data across multiple data stores.
EDWS-FR-DI-008	The Solution shall provide Exception Reporting and Notification, including the ability to identify, report and handle exceptions as they occur during integration.

Requirement ID	Requirement
EDWS-FR-DI-009	The Solution shall include an Administrative Console which provides Software allowing users to see the current state of integration processes during execution, and intercede if necessary.
EDWS-FR-DI-010	The Solution shall include a Data History Service (Incremental History Store) which will ensure that historical data is preserved for current and future analytical needs.
EDWS-FR-DI-011	The Solution toolset shall support job scheduling, management and also provide visibility into expected timeframes to complete extract, transform, and load processes.
EDWS-FR-DI-012	The Solution toolset shall provide detail logging and reporting capability including start and end times for all extract, transform and load jobs/processes that have been planned and scheduled in specified timeframes.
EDWS-FR-DI-013	The Solution's data integration tool shall be triggered through files, messages, queues, or any other payload as applicable.

J.23 – DATA QUALITY

Requirement ID	Requirement
EDWS-FR-DQ-001	The EDWS shall include audit and control processes that will prove that the target EDWS and internal analytic applications were populated accurately and completely.
EDWS-FR-DQ-002	The EDWS shall ensure that all source data that enters the EDWS is processed through a well-defined data quality process before it can be integrated and published for access by subscribing end users and external systems.
EDWS-FR-DQ-003	The EDWS shall have automated quality checks and controls to regularly identify inconsistent, incorrect, and redundant values and report the identified data in the form of reports or alerts.
EDWS-FR-DQ-004	The EDWS shall have the ability to track transaction frequency.
EDWS-FR-DQ-005	The EDWS shall include audit and control processes that will identify, report, summarize errors/defects in the data residing in the EDWS and the internal analytic applications.
EDWS-FR-DQ-006	The EDWS shall have controls and routines to analyze and report data values, statistics, frequencies, and ranges on a dashboard that monitors the data quality activities.
EDWS-FR-DQ-007	The EDWS shall include service-oriented characteristics and support for service-oriented architecture (SOA) deployments related to data quality information.
EDWS-FR-DQ-008	The EDWS shall have capabilities for creating, managing and deploying data quality rules.

Requirement ID	Requirement
EDWS-FR-DQ-009	Data quality tools and products shall provide a range of additional functionality that supports many of the data quality core functions, or specific data quality applications. These additional valuable functions include: ➢ Ability to interact with range of different data structures ➢ Subject-area specific support ➢ Metadata Management ➢ Capability for creating, managing and deploying data quality rules ➢ Operations and Administration ➢ Support SOA deployments
EDWS-FR-DQ-010	The Contractor shall provide a tool that provides data profiling metrics such as completeness, consistency, conformity, integrity, duplication, and accuracy in easy-to-understand reports, charts, graphs, etc.
EDWS-FR-DQ-011	The EDWS shall provide functionality for attribute-based analysis (for example, minimum, maximum, frequency distribution) and dependency analysis (cross-table and cross-data set analysis). Profiling results will be exposed in either a tabular or graphical form.
EDWS-FR-DQ-012	The EDWS shall have ability to set quality metrics to provide ongoing data profiling.
EDWS-FR-DQ-013	The EDWS shall provide the functionality to perform analysis of data to derive statistics that provide insight into the quality, quantity and distribution of data to assist in identifying data quality issues.
EDWS-FR-DQ-014	The EDWS shall provide capabilities to support automated data profiling activities.
EDWS-FR-DQ-015	The Contractor shall provide a tool that will offer data profiling capabilities that will obtain comprehensive and accurate information about the content, quality, and structure of data in the source systems as an on-going process.
EDWS-FR-DQ-016	The EDWS will be expected to have the capability to perform data quality checks at various stages, and the ability to assess data quality before launching into data warehousing build processes and populate structured data into the data warehousing zone.
EDWS-FR-DQ-017	The EDWS system shall handle common data matching and standardization, address parsing, standardization, verification and geo-coding to improve the quality and consistency of address information and match against local identifiers by source.
EDWS-FR-DQ-018	The EDWS solution shall provide compatibility with the Data Integration tool. The Contractor will describe how the DQ monitoring tool can be configured so that data loading to destination can be controlled when minimum data quality thresholds are not met.
EDWS-FR-DQ-019	The EDWS system shall have an Interactive Dashboard providing the ability to gather and visualize statistics about the data and present the results of these profiling and audit processes in an easy to understand executive dashboard. Graphical views will show data quality trends over time.

Requirement ID	Requirement
EDWS-FR-DQ-020	The EDWS system will have the ability to transform scalable volumes of data on the fly against the defined business rules, providing a flexible and adaptable data quality firewall.
EDWS-FR-DQ-021	The Contractor shall provide details about their recommended approach to monitor data quality dimensions listed below – ➢ Validity: Are all data values within the value domains specified by the business? ➢ Accuracy: Does data reflect the real-world objects or a verifiable source? ➢ Consistency: Is data consistent between systems? Do duplicate records exist? ➢ Integrity: Is data consistent between systems? Do duplicate records exist? ➢ Timeliness: Is the data available at the time needed? ➢ Completeness: Is necessary data present?
EDWS-FR-DQ-022	The Solution shall enable and the Contractor shall facilitate establishment of business rules and policy, Key Performance Indicators (KPI), and data quality thresholds.
EDWS-FR-DQ-023	The Contractor shall provide the capability to identify full, partial, and potential duplicates encounters/claims based on criteria to be defined by DMAS.

J.24 – Master Data Management

Requirement ID	Requirement
EDWS-FR-MDM-001	The Contractor shall provide a profile function-Including the ability to perform a quality assessment, detect anomalies, and highlight issues in enterprise data assets. It shall also Identify the source schemas for master data which may be structured or unstructured data.
EDWS-FR-MDM-002	The Contractor shall provide the functional ability to create a common model for data from multiple sources that may iterate over time to accommodate changes and ongoing modifications. Master Data Model shall be created to cater the entire reference data requirement and the changes to the model will be monitored.
EDWS-FR-MDM-003	The Contractor shall be required to acquire data from multiple sources, synchronize, format, and make available.
EDWS-FR-MDM-004	The Contractor shall provide the ability to cleanse, standardize and augment data as well as remove duplicates and create an accurate master across and within sources.
EDWS-FR-MDM-005	The Contractor shall provide a governing function that will: ➢ Institute process controls that shall provide a systematic approach to improved data quality ➢ Enable users to collaborate on, agree, and publish a set of accepted master data ➢ Establish a common understanding and publish highly accurate, reliable master data set for domain across DMAS.
EDWS-FR-MDM-006	The Contractor shall provide a Master Data Management solution that drives improved data quality of patients/members, providers, organizations, facilities, locations, and other key master domain data within the Enterprise.

Requirement ID	Requirement
EDWS-FR-MDM-007	The Master Data Management solution shall use advanced techniques (such as probabilistic matching) to connect disparate pieces of patient/member, provider and organization information across multiple sources, into a single, actionable view within the Enterprise.
EDWS-FR-MDM-008	The Master Data Management solution shall enhance the EDWS repository with automated matching and linking of members and providers as well as maintaining the relationships between them.
EDWS-FR-MDM-009	The Master Data Management solution shall generate a single trusted view of each provider, (whether that provider is an individual doctor, nurse or home health worker or an organization clinic, lab, or practice location).
EDWS-FR-MDM-010	The Master Data Management solution shall drive integrity initiatives and identification of fraud and waste.
EDWS-FR-MDM-011	The Master Data Management solution shall create a master virtual repository of provider information that integrates trusted data sources from across claims, encounters, and services.
EDWS-FR-MDM-012	The Master Data Management solution shall be expected to facilitate creating “golden records”.
EDWS-FR-MDM-013	The Master Data Management solution shall establish a common understanding and publish highly accurate, reliable master data set for domains across DMAS.
EDWS-FR-MDM-014	The Master Data Solution Model shall be created to cater the entire reference data requirement and the changes to the model will be monitored.
EDWS-FR-MDM-015	The Master Data Management solution shall be capable of consuming web services, asynchronous messages, and supporting various formats of consumption including but not limited to JSON, XML, SOAP, MIME, X12, and HL7.
EDWS-FR-MDM-016	The Solution model shall support standard algorithms, such as SOUNDEX, NYSIS, and enable standardizing names: e.g., William and Bill.

J.25 – DISASTER RECOVERY

Requirement ID	Requirement
EDWS-NFR-DR-001	The Contractor shall prepare and submit for Department approval a comprehensive Disaster Recovery Plan due to the Department on an annual basis and after a substantive change to the EDWS that would require revision to the DR Plan.
EDWS-NFR-DR-002	The Contractor shall provide back-up processing capability at a remote site from the primary site such that normal EDWS processing can continue in the event of a disaster or major hardware problem at the primary site. All operations at the remote back-up site will meet established contractual performance and SLA requirements.
EDWS-NFR-DR-003	The Contractor shall coordinate with and demonstrate to the Department the Contractor's disaster recovery capabilities in accordance with SLAs. The Contractor will include recovery of any new functionality implemented during the previous year.
EDWS-NFR-DR-004	The Contractor shall, in the event of a catastrophic (i.e. possibility of crimes, terrorism, hackers, intentional torts, human error, virus, etc.) or natural disaster, resume normal operational business functions at the earliest possible time in accordance with specified SLAs and according to the Department-approved disaster recovery plan.
EDWS-NFR-DR-005	The Contractor shall, in the event of other disasters caused by such things as criminal acts, human error, malfunctioning equipment, computer viruses, or electrical supply, resume normal business functioning at the earliest possible time, in accordance with SLAs.
EDWS-NFR-DR-006	The Contractor shall plan and coordinate disaster recovery activities with Department-approved business partners.
EDWS-NFR-DR-007	The Contractor shall coordinate with and demonstrate to the Department the Business Continuity and Contingency Plan every calendar year in conjunction with the annual disaster recovery demonstration.
EDWS-NFR-DR-008	The Contractor shall leverage and use the LAST environment as the Disaster Recovery site for the EDWS. The extent to which the primary site cannot be restored in accordance with SLAs, may determine that the recovery site be considered the new primary site.
EDWS-NFR-DR-009	The Contractor shall, upon notification by DMAS that the primary production site is deemed inoperable, execute the Disaster Recovery Plan.
EDWS-NFR-DR-010	The Contractor shall provide back-up network connectivity at both the primary Production and Disaster Recovery sites with the capacity to support EDWS and its components.
EDWS-NFR-DR-011	The Contractor shall ensure that the DRP is available to Commonwealth and Federal auditors at all times.
EDWS-NFR-DR-012	The Contractor shall establish, in cooperation with DMAS a hierarchy of critical services and infrastructure to determine the order that services will be restored.
EDWS-NFR-DR-013	The Contractor shall maintain a DRP that provides for the recovery of critical EDWS services in accordance with SLAs of the discovery of the service disruption, the declaration of a disaster or EDWS Production site becoming unsafe or inoperable.

Requirement ID	Requirement
EDWS-NFR-DR-014	The Contractor shall maintain or otherwise arrange for a disaster recovery site for its system operations in the event of a disaster that renders the EDWS Production site inoperable.
EDWS-NFR-DR-015	The Contractor shall modify the DRP, software installation procedures and operational procedures as needed to reflect the changes implemented with new data sources, system changes, or any enhancements that will impact the disaster recovery capability.
EDWS-NFR-DR-016	The Contractor shall perform an annual review of the disaster recovery back-up site, procedures for all off-site storage and validation of security procedures.
EDWS-NFR-DR-017	The availability schedules and corresponding SLAs for the Production EDWS shall apply to the disaster recovery environment when fulfilling the Production role.
EDWS-NFR-DR-018	The Contractor's DRP test shall be performed, each year at no additional cost to DMAS. In the event the Contractor's test is deemed by HHS to be unsuccessful, the Contractor shall continue to perform the test at its expense until satisfactory results are received and approved by DMAS.
EDWS-NFR-DR-019	The Contractor shall develop, maintain and submit to DMAS, in advance, all proposed off-site procedures, locations and protocols for DMAS review and approval prior to implementation. These items shall be incorporated by the Contractor as components of the Disaster Recovery Plan (DRP).
EDWS-NFR-DR-020	The Contractor shall execute a disaster recovery test to demonstrate the capability of the Contractor to restore processing capability in accordance with the DRP and for all critical system components at a remote site. The DRP test shall be included as a part of Acceptance Testing. The length of the test shall be the amount of time that is necessary to recover from the disaster and provide proof that the recovery has been successfully completed.
EDWS-NFR-DR-021	In the event of disaster, full EDWS functionality shall be restored in accordance with SLAs. Critical EDWS functions are defined as daily ETL refresh cycle and basic access to published data (querying, reporting, data analysis, web services, and web portal).
EDWS-NFR-DR-022	The Contractor shall take all precautions to ensure that EDWS system interruptions in service, resulting from a Production hardware failure, data corruption or a disaster that renders the Contractor's primary computer facility unusable are avoided.
EDWS-NFR-DR-023	If the EDWS Production site becomes unavailable during the contract period, the Contractor shall be required to move EDWS operations to the disaster recovery site. In this event, the Contractor shall not be allowed to return to the original EDWS Production site without approval of DMAS.
EDWS-NFR-DR-024	The Contractor's disaster recovery test shall include the processing of one weekly ETL cycle and one daily ETL cycle as in place at the time of the test, and will involve all major EDWS functions including data acquisition, data access (Web portal, business intelligence capabilities), and data delivery. A report summarizing disaster recovery test results shall be provided to DMAS in accordance with SLAs. This report will include remediation steps taken to resolve any issues discovered during the test.
EDWS-NFR-DR-025	The Contractor shall comply with all SLAs that are relevant to Disaster Recovery Requirements.

Requirement ID	Requirement
EDWS-NFR-DR-026	The Contractor's Disaster Recovery Plan shall adhere to Commonwealth and Federal laws, rules, regulations, and guidelines, will address recovery of EDWS functions, human resources and the technology infrastructure and shall include: ➢ Checkpoint/restart capabilities ➢ Retention and storage of back-up files and software ➢ Hardware back-up for the servers ➢ Hardware back-up for data entry ➢ Network back-up for telecommunications ➢ Telephone communications lines to the disaster back-up site ➢ Recovery prioritization list (hardware and software applications) ➢ Telecommunication Voice Switch
EDWS-NFR-DR-027	The Contractor's Disaster Recovery Plan shall include detailed procedures to address (but not be limited to) the following potential events: ➢ Natural disasters (e.g., earthquake, fire, flood, storms) ➢ Terrorist acts ➢ Power disruptions or power failure ➢ Computer software or hardware failures ➢ Computer shutdown due to hackers or viruses ➢ Significant compromises/degradation of EDWS performance ➢ Processing shutdowns
EDWS-NFR-DR-028	The Contractor shall coordinate with VITA to meet the minimum geographic offsite location requirement of 100 miles between the disaster recovery site and the Production environment site.

J.26 – TRAINING

Requirement ID	Requirement
EDWS-SR-TRN-001	The Contractor shall work with DMAS to analyze, define, and tailor training to each specific user role and group.
EDWS-SR-TRN-002	The Contractor shall submit to DMAS for approval, all training plans which address the training needs for each user group and role.
EDWS-SR-TRN-003	The Contractor shall provide hands on training to the DMAS user community prior to each EDWS release.
EDWS-SR-TRN-004	The Contractor shall conduct initial onsite training for each EDWS release in Richmond Virginia to train essential Department staff that will use the EDWS and the newly developed reports.
EDWS-SR-TRN-005	The Contractor shall develop a multi-tier training curriculum to educate Department staff on the use of the EDWS and the use of the reporting tool, using Department defined user proficiency levels from Basic to Super.

Requirement ID	Requirement
EDWS-SR-TRN-006	The Contractor shall provide a computer-based training (CBT) course for each EDWS release for new employees and existing staff.
EDWS-SR-TRN-007	The Contractor shall procure a training facility and related resources at no cost to the State, if Commonwealth facilities are not available.
EDWS-SR-TRN-008	The Contractor shall be required to provide a fully qualified, expert user of the EDWS and reporting tool, for Department staff training.
EDWS-SR-TRN-009	If the Contractor sponsors training courses, symposiums, or users' conferences, the registration fee shall be waived for the attendance of essential DMAS staff. These sponsored training(s) will be identified in the training plan.
EDWS-SR-TRN-010	The Contractor shall provide ongoing training and update CBT courses to address system or functionality changes for the EDWS.
EDWS-SR-TRN-011	The Contractor shall equip the training and resource center, including classroom training facilities to accommodate stand-up instructor-led sessions, with effective learning environment and tools.
EDWS-SR-TRN-012	The Contractor shall equip the training facility for an effective and accessible learning environment with all necessary educational equipment to provide effective training, complete with desks, chairs, computers, tables, whiteboard, flip charts and access to electronic information.
EDWS-SR-TRN-013	The Contractor shall furnish and maintain appropriate hardware, software and telecommunications to support the development, maintenance and presentation of training program(s).
EDWS-SR-TRN-014	The Contractor shall use DMAS approved training media including, but not limited to, teleconferencing, Web-based and computer-based training.
EDWS-SR-TRN-015	The Contractor shall comply with all SLAs that are relevant to this section.

J.27 – METADATA MANAGEMENT TOOLSET

Requirement ID	Requirement
EDWS-FR-MET-001	The Metadata toolset shall provide the capability to identify, capture, retain, analyze, and publish information that provides detailed knowledge about the characteristics and behavior about business and technical processes and their associated data.

Requirement ID	Requirement
EDWS-FR-MET-002	The Contractor shall provide a unified and shared metadata repository supporting end-to-end information lifecycle management and data governance. At a minimum, the following are the metadata categories that the respondents will address in their proposals: ➢ Business Metadata Repository ➢ Technical Metadata Repository ➢ ETL Technical metadata ➢ Quality Metadata Repository ➢ Operational Metadata Repository ➢ Security Metadata Repository ➢ End User Metadata Repository
EDWS-FR-MET-003	The Contractor's Business Glossary shall provide business vocabulary and technical definitions across data elements.
EDWS-FR-MET-004	The Contractor shall provide metadata capabilities to maintain and visualize data lineage from sources to reports, including explanation of how the tool will help perform impact analysis when changes need to be implemented.
EDWS-FR-MET-005	Data lineage captured from metadata shall: ➢ Provide data flow from origin to destination ➢ List rules and transformation for each flow ➢ Enable "what-if analysis" for change in an ETL flow ➢ Help identify right source and optimum data flow for any new requirement ➢ Provide meaning of specific field in a report ➢ Eliminate data redundancy and ensure completeness ➢ Provide information on report usage ➢ Identify data quality index associated with a data element, thus increasing the trust factor ➢ Provide operational metadata
EDWS-FR-MET-006	All metadata in the Solution and databases shall be made secure. Access shall be granted based on authorized approval to tools and repositories of metadata to users.
EDWS-FR-MET-007	The Contractor shall maintain the capability to employ data masking and obfuscation to replace sensitive data and shall ensure masked/obfuscated data is realistic-looking and has the same type and characteristics as the original data.

J.28 – CONTRACTOR SUPPORT

Requirement ID	Requirement
EDWS-SR-VS-001	The Contractor shall supply all necessary project resources in order to provide adequate project support 24/7/365 days per year. The Contractor shall either set up a facility in Richmond or co-locate with DMAS staff for key personnel. DMAS will determine the staffing requirements based on the phase of the project and effectiveness of the contractor team. The operations facility shall provide the infrastructure necessary to support all required Department staff functions.
EDWS-SR-VS-002	The Contractor shall utilize VITA issued laptops and have to be physically present in Richmond, Virginia to collect the laptops after completing identification screening. Upon DMAS request, the Contractor shall be able to provide computers with connectivity to the State server, internet and phone access for each employee, telecommunications, and tech support to staff. Those computers shall have suitable, sufficient processor speed, memory and hard drive space to operate and support the current release of Microsoft's operating system and Office Suite software, as well as any additional equipment and software necessary to access and utilize EDWS functions. All equipment at the Contractor's operations facility to which staff shall be assigned, shall have equivalent standards as those defined by VITA.
EDWS-SR-VS-003	The following minimum activities shall also be performed at the Contractor's primary project site: ➢ Contract administration/housing key personnel ➢ Project Coordination ➢ Joint application design (JAD) and review sessions ➢ Demonstrations of design prototypes ➢ Discussion and presentations of proposed system design changes ➢ Deliverable walkthroughs ➢ Technical and user support help desk functions ➢ System testing task walkthroughs ➢ User acceptance test support ➢ Implementation planning ➢ Transition management support ➢ Regularly scheduled and DMAS-requested training sessions The Contractor shall accommodate these activities in accordance with the release schedule.
EDWS-SR-VS-004	The Contractor shall provide a solution for multi-layered production support based on response time and severity. The Contractor will include details about support for EDWS and reporting.
EDWS-SR-VS-005	The Contractor shall be solely responsible for obtaining all permits, approvals, licenses, certifications and similar authorizations required by any local, State or Federal entities for the project and maintaining them throughout the duration of the contract.
EDWS-SR-VS-006	The Contractor shall protect equipment from physical risks, including but not limited to power failures and other electrical anomalies.

Requirement ID	Requirement
EDWS-SR-VS-007	The Contractor may perform functions, including computer processing, outside of Virginia but must perform the functions within the continental United States.
EDWS-SR-VS-008	The Contractor shall comply with all SLAs that are relevant to this section.
EDWS-SR-VS-009	The Contractor shall provide all professional services listed in section 3.b.7 Service Requirements and shall manage resources and skill sets accordingly. Contractor shall provide appropriate implementation and post implementation services during multiple phases of the project as described in section 3.b.1 Release Scoping.
EDWS-SR-VS-010	The Contractor shall implement required Federal and Medicaid reports including but not limited to the CMS required reports listed in Appendix K.
EDWS-SR-VS-011	The Contractor shall provide support to transition current reports to the new EDWS platform. Additionally the Contractor shall provide support to develop new canned reports, dashboards and ad-hoc reports as determined by DMAS during project lifecycle.

J.29 – Hours of Operation

Requirement ID	Requirement
EDWS-SR-HOP-001	The Contractor shall provide secure, on-line role-based access for inquiries, reporting, updates and submissions to the EDWS and ancillary applications for authorized users from 6:00AM-8:00PM (Eastern Time), Monday through Friday, excluding official Commonwealth of Virginia closed holidays. The Contractor shall notify and obtain approval from the Department prior to scheduling non-emergency system downtime/maintenance during these times. Expected system uptime is 24*7*365 days a year. Any outage for maintenance shall be planned ahead and approved by normal Change Management approval process.
EDWS-SR-HOP-002	The Contractor shall provide a process for requesting access to the EDWS during special circumstances depending on legislative and/or other circumstances. This may require platform availability and EDWS Operational support staff outside of the above business hours including weekends. When possible, DMAS will provide notification to the Contractor three (3) business days prior to requiring operations outside of the standard hours.
EDWS-SR-HOP-003	The Contractor shall provide network availability in accordance with SLAs.
EDWS-SR-HOP-004	The Contractor shall comply with all SLAs that are relevant to this section.

J.30 – EDWS Performance Standards

Requirement ID	Requirement
EDWS-PERF-STD-001	Solution performance data shall be kept online for 2 years.
EDWS-PERF-STD-002	The Solution shall pass the Commonwealth's security assessments based on the Commonwealth and federal security requirements.

J.31 – Job Scheduling

Requirement ID	Requirement
EDWS-FR-JS-001	Data access component shall provide the capability to schedule reports to be run immediately or scheduled in the future, based on time or event trigger.
EDWS-FR-JS-002	Data access component shall provide the capability to schedule reports for execution and route the result sets automatically to select addressees through e-mail.
EDWS-FR-JS-003	Job scheduling and workflow management software shall be required to support all end to end EDWS job process components including data acquisition, data quality checks, data transformations and data publishing.
EDWS-FR-JS-004	Job scheduling tools shall permit capture of operational metadata.
EDWS-FR-JS-005	Job scheduling tools shall have restart/recovery processing capability for any job process components which may be interrupted by software or hardware failure.

J.32 – Non-Functional Requirements

Requirement ID	Requirement
EDWS-NFR-MD-001	The Contractor shall provide conformance capability by common EDWS aspects presented in identically the same way across the entire EDWS specification.
EDWS-NFR-MD-002	The Contractor shall adequately and efficiently integrate operational information.
EDWS-NFR-MD-003	The Contractor shall determine the loading periodicity that offers best tradeoff between user requirements and environment restrictions and update data with a frequency that meets business needs in a timely manner.
EDWS-NFR-MD-004	The Contractor shall create database model, data marts etc., for provisioning access to users at different levels both internal and external to the agency for querying data.
EDWS-NFR-MD-005	The Contractor shall efficiently model the EDWS and create sound data descriptions.
EDWS-NFR-MD-006	The Contractor shall build a multidimensional architecture that entails accessing external and internal information under strict time and quality control constraints.
EDWS-NFR-MD-007	The Contractor shall design multidimensional data model that is stable, flexible to changing business practices, extensible to changing business needs and that can handle the diversity of Medicaid data without sacrificing ease of use or performance.
EDWS-NFR-MD-008	The Contractor shall integrate operational data on a timely basis and utilize business modeling techniques that contribute to increase data interpretability.

Requirement ID	Requirement
EDWS-NFR-MD-009	The Contractor shall provide a solution which meets the non-functional requirements described in section 3.b.6 Non-Functional Requirements including performance, Security, Multidimensionality, Scalability, Maintainability, Extensibility, Usability, Backup, Recovery & Archive, and Data Retention.

J.33 – POST-IMPLEMENTATION SUPPORT

Requirement ID	Requirement
EDWS-SR-POST-001	The Contractor shall provide post-implementation support after every release and until 6 months after ETL for all source applications is established.
EDWS-SR-POST-002	The Contractor shall provide cost estimate for three (3) years of maintenance after implementation of all phases of EDWS.
EDWS-SR-POST-003	The Contractor shall provide support for all general activities and tasks including operations, administration, maintenance and technical support for the EDWS.
EDWS-SR-POST-004	The Contractor support will include ongoing administration required to manage software updates and patches, data partitioning, indexes, statistics updates, file vacuuming, and scaling.
EDWS-SR-POST-005	The Contractor shall be required to provide system maintenance which will include at a minimum: ➢ Data Maintenance activities for table updates ➢ Activities necessary to correct deficiencies ➢ Activities necessary to meet performance requirements ➢ Activities necessary to ensure data, tables, programs, and documentation are current ➢ Changes to scripts or system parameters concerning frequency, number, sorting, and media of reports ➢ Addition of new values or changes
EDWS-SR-POST-006	The Contractor shall provide Level 3 support for those capabilities released into production.
EDWS-SR-POST-007	The Contractor shall provide support responsible for handling the most difficult or advanced problems (Level 3) via the Contractor's Operational Support Team. Level 3 supports might include providing solutions to new or unknown issues.
EDWS-SR-POST-008	The Contractor shall be responsible for Higher level diagnosis and action when problems are escalated from Level 1 or Level 2 support.
EDWS-SR-POST-009	The Contractor shall be available at the Contractor's facility and provide support in accordance with Service-Level Agreements (SLAs).
EDWS-SR-POST-010	The Contractor shall provide a process for requesting on-site support during special circumstances depending on legislative and/or other circumstances.

Requirement ID	Requirement
EDWS-SR-POST-011	Knowledgeable support personnel shall be available via a toll-free number during normal business hours. The Contractor shall maintain sufficient telephone lines and personnel so that no more than five percent (5%) of incoming calls within a month meet the following conditions: ➢ Ring busy ➢ On-hold for more than two (2) minutes ➢ Call not answered within ten (10) rings
EDWS-SR-POST-012	The Contractor support shall include, but is not limited to, ETL job scheduling and monitoring, defect tracking and resolution, developing specialized reports, developing alternative ways to group, present, or otherwise.

J.34 – REPORTING

Requirement ID	Requirement
EDWS-RPT-001	The Contractor supplied reporting tool shall include the ability to conduct: ➢ Ad hoc queries ➢ Pre-defined reports ➢ Geographical mapping ➢ Statistical analysis ➢ Data mining ➢ Clinical analysis
EDWS-RPT-002	The EDWS shall provide the means for completing reports necessary to meet Federal and Commonwealth rules and regulations for surveillance and utilization review activities as well as program information for legislators, decision makers, and the public.
EDWS-RPT-003	The EDWS shall provide the ability to produce reports using ad hoc queries and/or pre-defined report parameters, or support the use of SAS and other BI/Visualization tools external to the EDWS.
EDWS-RPT-004	The Contractor supplied reporting tool shall provide the capability to identify anomalous or outlier data.
EDWS-RPT-005	The reporting tool shall have the capability to analyze characteristics of individual record instances to assign it to a category.
EDWS-RPT-006	The reporting tool shall have the capability to combine data on multiple dimensions to reveal proximity in two or more dimensions.
EDWS-RPT-007	The reporting shall have the capability to analyze associations between specific instances of underlying data.
EDWS-RPT-008	The reporting tool shall have the ability to substitute and score words and phrases using wildcards and weighing, stemming to identify root words, etc.
EDWS-RPT-009	The reporting tool shall have the capability to utilize keyword extraction, language support, etc. for text mining.

Requirement ID	Requirement
EDWS-RPT-010	The reporting tool shall have the ability to automatically roll up the terms/texts to the highest value based on weights in a document.
EDWS-RPT-011	The reporting tool shall have the capability to generate summary statistics for various usages including but not limited to words that are searched for often, frequently replaced words, etc.
EDWS-RPT-012	The reporting tool shall be able to handle large datasets with a wide range of variables and attributes to examine the broadest range of correlations while minimizing variance and estimation errors.
EDWS-RPT-013	The reporting tool shall provide the ability to manipulate data through scoring, grouping, classification, clustering, and segmentation.
EDWS-RPT-014	The reporting tool shall have the ability to summarize grouping functions such as count, max, min, sum, average, standard deviation, etc.
EDWS-RPT-015	The reporting tool shall support the clustering, decision trees, linear regression, logistical regression, Chi-square, analysis of variance and sequence clustering analysis, etc.
EDWS-RPT-016	The reporting tool shall provide the capability to estimate goodness of fit, skewness, kurtosis, normality, collinearity, heteroscedasticity, etc.
EDWS-RPT-017	The reporting tool shall provide the ability to perform categorical data analysis, basket analysis and support cluster analysis.
EDWS-RPT-018	The reporting tool shall have the flexibility to produce reports of varying levels of detail from high-level to detailed ones that support drill-down capabilities, multiple cross-tabulations (e.g., by demographics, geography and managed care plan), sub setting, modeling, and forecasting.
EDWS-RPT-019	The reporting tool shall provide an online audit trail for all additions, changes, or updates to system data that identifies the responsible user or process, date and time of change, and the status of the record.
EDWS-RPT-020	There shall be confirmation that no records processed or loaded to the Contractor's production application or environments are physically deleted.
EDWS-RPT-021	There shall be confirmation that the Contractor will obtain DMAS approval prior to archiving data from production applications or environments.
EDWS-RPT-022	The Contractor shall support the receipt and load of member enrollment records through an automated, real-time interface with the MES using industry standard transactions.
EDWS-RPT-023	The Contractor shall support member enrollment reconciliation activities on a mutually agreed upon schedule with DMAS.
EDWS-RPT-024	The Contractor shall provide the ability for permissioned users, through role-based security, to manually enter or update member enrollment data for Department approved scenarios.

Requirement ID	Requirement
EDWS-RPT-025	The Contractor shall provide the ability to retain and display all historical member enrollment records, sub-records, or segments including an audit trail of any additions, changes, or updates.
EDWS-RPT-026	The Contractor shall provide a solution capable of exchanging industry standard eligibility verification requests received from internal and external entities or agencies in support of DMAS MITA Roadmap and Enterprise Maturity.
EDWS-RPT-027	The Contractor shall support interfaces with external systems or MES contractors to maintain and update a drug file from a national commercial drug data vendor.
EDWS-RPT-028	The Contractor shall provide, at no additional cost to DMAS, drug data from a national commercial drug file that will be used to meet the requirements of this solicitation. This national commercial drug file must also be licensed for distribution and use in other modules to support the MES.
EDWS-RPT-029	The Contractor shall maintain, at no additional cost to DMAS, online pharmacy provider and prescriber reference data from a national commercial vendor or vendors to support claim adjudication, encounter processing, and other distributed MES activity.
EDWS-RPT-030	The Contractor shall support the receipt, load, and update of DMAS enrolled pharmacy providers and prescribers through an automated process.
EDWS-RPT-031	The Contractor shall provide a solution that validates pharmacy providers and prescribers submitted on claims and encounters are eligible to participate in Medicaid and not otherwise excluded from Federally funded health care programs pursuant to sections 1128 and 1156 of the Social Security Act.
EDWS-RPT-032	The Contractor shall notify the Department when DMAS enrolled pharmacy providers, or prescribers are reported as ineligible to participate in Federally funded health care programs as noted above.
EDWS-RPT-033	The Contractor shall provide the ability to deny point of sale claims for excluded pharmacy providers or prescribers.
EDWS-RPT-034	The Contractor shall obtain, process, and load CMS data required to support edits and audits defined in the DMAS program.
EDWS-RPT-035	The Contractor shall obtain, process, and load CMS data required to support drug rebate functions.
EDWS-RPT-036	The Contractor shall provide capability to distinguish member waiver participation and flag correlated encounter transactions to enable reporting based on the requirements provided by Business.
EDWS-RPT-037	The Contractor shall provide an extract from EDWS based on criteria to be defined by DMAS to support shadow price of encounters on an ad hoc basis. Additionally, reload the shadow priced encounters back to EDWS.
EDWS-RPT-038	The Contractor shall provide an automatic mechanism to compare MCO payments for services against Medicaid-defined pricing (e.g., shadow pricing).
EDWS-RPT-039	The Contractor shall provide the capability to collect and load additional data such as service authorization, remittance advice, etc.

Requirement ID	Requirement
EDWS-RPT-040	The Contractor shall provide capability to produce quality and compliance reports to support SLAs and help adherence to contracts.

J.35 – System Backup and Recovery

Requirement ID	Requirement
EDWS-SBR-001	The Contractor shall maintain and operate the EDWS to the standards required to pass periodic reviews as may be conducted by CMS State Contracted Independent Audits in accordance with Commonwealth and Federal laws, rules, regulations, and guidelines.
EDWS-SBR-002	The Contractor shall develop standards and policies that follow national and Commonwealth standards and requirements, including requirements for interoperability among systems.
EDWS-SBR-003	The Contractor shall provide knowledgeable and skilled staff to operate, maintain, and enhance the EDWS.
EDWS-SBR-004	The Contractor shall maintain sufficient staff to perform all contract requirements within Department defined timeframes and according to SLAs.
EDWS-SBR-005	The Contractor shall perform the system operations tasks and activities with staff that is separate and distinct from the staff needed to perform the System Maintenance and Modification tasks.

J.36 – DMAS Defined Options

The requirements below are those that DMAS has identified as requirements that it will consider optional, meaning DMAS will maintain the option to include the related requirements in the Enterprise Data Warehouse Services Solution. The price for these options will not be considered as part of the baseline price proposal used for evaluation.

J.36.A – Meeting Space

Requirement ID	Requirement
EDWS-MTG-001	The Contractor shall provide appropriate space to conduct meetings during the DDI phase that require DMAS staff attendance, including but not limited to JADs, walkthroughs, and team meetings. The space would ideally be within walking distance of the DMAS offices, but must be no more than 3 miles from 600 East Broad Street. Include the number of sessions, length of sessions, and capacity in your proposal. The proposed meeting space should be fully functional to ensure productivity, including but not limited to accommodate teleconferences, connectivity for WebEx meetings, projector equipment and white boards.

APPENDIX K – CMS REQUIRED REPORTS

K.1 – CMS REQUIRED REPORTS

K.1.1 – CMS-21: QUARTERLY CHILDREN'S HEALTH INSURANCE PROGRAM (CHIP) STATEMENT OF EXPENDITURES FOR TITLE XXI

The CMS-21 is the state's accounting statement of actual recorded expenditures and the disposition of Federal funds which Virginia, in accordance with Sections 2105(e) and 2107(b)(1) of the Social Security Act, must submit each quarter under Title XXI of the Act. Expenditures reported on this form primarily include those made to initiate and expand health insurance coverage to uninsured, low-income children through a separate CHIP. Administrative costs associated with expanding child health insurance coverage to uninsured, low-income children through an expansion of a State Medicaid program may also be included on the CMS-21 if the state opts to claim Federal Financial Participation at the enhanced Federal Medical Assistance Percentage. Program services costs associated with expanding child health insurance coverage to uninsured, low-income children through an expansion of a State Medicaid program are not reported on the CMS-21.

The CMS-21 shows the disposition of Federal CHIP grant funds for the quarter being reported and previous fiscal quarters and years, recoupments made or refunds received, adjustments for overpayments or underpayments, and adjustments for premiums or cost-sharing amounts received.

The amounts reported on The CMS-21 and its attachments must be actual recorded expenditures for which all supporting documentation has been compiled and is available immediately at the time the claim is filed. The CMS-21 is an accounting statement of actual expenditures for which Virginia is entitled to Federal reimbursement under Title XXI and which reconciles any advance of Title XXI Federal funds made on the basis of estimates provided on the CMS-21B. Reconciliations of expenditures to estimates, however, will not occur until after the period of availability for allotments has expired.

The amount claimed on the CMS-21 is a summary of actual expenditures derived from source documents such as invoices, cost reports and eligibility records. All summary statements or descriptions of each claim must identify the claim and source documentation. Claims developed through the use of sampling, projections, or other estimating techniques are considered estimates and are not allowable under any circumstances.

K.1.2 – CMS-21B: QUARTERLY CHILDREN'S HEALTH INSURANCE PROGRAM (CHIP) PROGRAM BUDGET REPORT

DMAS uses the CMS-21B to report quarterly budget related statistical information required for implementation of the CHIP under Title XXI of the Act, established by the Balanced Budget Act of 1997 (BBA).

The information provided by these forms is used by CMS to prepare the grant awards to Virginia for the Medicaid and CHIP programs, to ensure that the appropriate level of Federal payments for DMAS's expenditures under the Medicaid program and the CHIP are made in accordance with the CHIP related BBA legislation provisions, and to track, monitor and evaluate the numbers of related children being served by the Medicaid and CHIP programs.

K.1.3 – CMS-37: Quarterly Medicaid Program Budget Report

The CMS-37 is a quarterly financial report submitted by DMAS which provides a statement of the state's Medicaid funding requirements for a certified quarter and estimates and underlying assumptions for two fiscal years (FYs) – the current FY and the budget FY. In order to receive Federal financial participation, DMAS must certify that the requisite matching state/local funds are, or will be, available for the certified quarter. This information is submitted to the Centers for Medicare & Medicaid Services through the Medicaid Budget and Expenditure System (MBES) and is reviewed by CMS. Based on the CMS-37 submission and subsequent review, CMS authorizes Federal funding to DMAS for the certified quarter. If DMAS finds that the original request for Federal funds is insufficient, it may submit a revised CMS-37 through the MBES, justifying its request and recertifying for the quarter. After review and approval, CMS issues a supplemental grant award to DMAS for the additional Federal funds needed.

DMAS must submit a CMS-37 to CMS at least once each quarter (November 15, February 15, May 15, and August 15). The data contained in the CMS-37 provides a variety of information that is essential to CMS in determining historical expenditure and estimating trends, and in developing Federal Medicaid legislation, policy, and budgets.

K.1.4 – CMS-64 Quarterly Expense Report

The CMS-64 is a statement of expenditures for which states are entitled to Federal reimbursement under Title XIX and reconciles the monetary advance made on the basis of The CMS-37 (described above) filed for the same quarter. The amount claimed on the CMS-64 is a summary of expenditures from invoices, cost reports and eligibility records. All summary statements or descriptions of each claim must identify the claim and source documentation. Claims developed through the use of sampling, projections, or other estimating techniques are considered estimates and are not allowed.

Title XXI, enacted by the Balanced Budget Act of 1997 (BBA) and technical amendments made by Public Law 105-100, created the Children's Health Insurance Program (CHIP) which provides Federal matching funds to states to enable them to extend coverage to uninsured, low-income children. The states can elect to fund this title through a Medicaid expansion plan. The CMS-64 has been amended to report these expenditures on the CMS-64.21, CMS-64.21P, CMS-64.21U and CMS-64.21Up.

Currently, DMAS is able to electronically submit the quarterly financial/enrollment reports to the CMS Data Center and the Medicaid/CHIP data base through the WEB-based Medicaid and CHIP Budget and Expenditure System (MBES/CBES). We are currently unclear on whether or not, in the future, CMS will allow for electronic submission of the reports which will not require manual intervention.

K.1.5 – CMS-372: Annual Waiver Report

In order to satisfy the annual waiver report assurance, DMAS must annually prepare and submit the CMS-372. Instructions and guidance concerning the preparation and submission of the CMS-372 are located in the State Medicaid Manual:

https://www.dss.virginia.gov/benefit/medical_assistance/manual.cgi.

The CMS-372 aligns the annual waiver report with the simplified waiver cost-neutrality formula.

The CMS-372 requires that, for each waiver year, DMAS reports financial, statistical and other information about each waiver. This information includes: (a) the unduplicated number of persons who participated in the waiver during the waiver year; (b) the number of participants who utilized each

waiver service; (c) the amount expended for each waiver service and for all waiver services in total; (d) the average annual per participant expenditures for waiver service; (e) the total number of days of waiver coverage for all waiver participants and the average length of stay on the waiver; (f) expenditures under the state plan for non-waiver services (including services required under EPSDT when the waiver serves children) that were made on behalf of waiver participants and average per participant expenditures for such services (based on the number of participants who utilized such services); and, (g) information about the impact of the waiver on the health and welfare of waiver participants.

The CMS-372 reports the actual performance of a waiver against the prospective cost-neutrality demonstration in Appendix J of the revised waiver application. In addition, the financial and statistical data reported via the CMS-372 also serves as the baseline for the prospective demonstration of cost-neutrality when the state submits a renewal application for an approved waiver.

For more information (and Appendix J of the revised waiver application), please visit:

http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/Downloads/Technical-Guidance.pdf

K.1.6 – CMS-416: Annual Early Periodic Screening, Diagnosis and Treatment Program Report

The CMS-416 provides basic information on participation in the Medicaid child health program. The information is used to assess the effectiveness of the EPSDT program in terms of the number of individuals under the age of 21 (by age group and basis of Medicaid eligibility) who are provided child health screening services, referred for corrective treatment, and receiving dental services. Child health screening services are defined for purposes of reporting on this form as initial or periodic screens required to be provided according to Virginia's screening schedule.

The completed report demonstrates DMAS's attainment of its participation and screening goals. Participation and screening goals are two different standards against which EPSDT performance is measured on the CMS-416. From the completed reports, trend patterns and projections are developed for Virginia or its geographic regions, from which decisions and recommendations can be made to ensure that eligible children are given the best possible health care. The information is also used to respond to congressional and public inquiries.

Each state that supervises or administers a medical assistance program under Title XIX of the Social Security Act must report annually on the CMS-416. These data must include services reimbursed directly by the state under fee-for-service, or through managed care, prospective payment, or other payment arrangement or through any other health or dental plans that contract with the state. DMAS is required to collect encounter data from managed care and prospective payment entities in sufficient detail to provide the information required by this report.

Please refer to the following for more information about the specific data required for this report:

http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Benefits/Early-and-Periodic-Screening-Diagnostic-and-Treatment.html

K.1.7 – Transformed Medicaid Statistical Information System (T-MSIS)

The Transformed Medicaid and Statistical Information System (T-MSIS) is used by CMS to gather key eligibility, enrollment, program, utilization and expenditure data for the Medicaid and Children's Health

Insurance Program (CHIP). These data provide CMS with a large-scale database of all those eligible and receiving services under Medicaid and CHIP programs for every state and territory. Section 4735 of the Balanced Budget Act of 1997 included a statutory requirement for states to submit claims data, enrollee encounter data, and supporting information. Section 6504 of the Affordable Care Act strengthened this provision by requiring states to include data elements the Secretary determines necessary for program integrity, program oversight, and administration.

DMAS provides CMS with a set of eight T-MSIS files each month. There are four monthly claim files (CLAIM-IP CLAIM-OT, CLAIM-RX, CLAIM-LT), a rolling seven years of Member Eligibility, a Provider file and a Third Party Liability file. These files contain specified data elements for persons covered by Medicaid and their adjudicated claims for medical services reimbursed with Title XIX funds. The current uses of MSIS data include: 1) health care research and evaluation activities; 2) program utilization and expenditures forecasting; 3) analyses of policy alternatives; 4) responses to stakeholder inquiries; and 5) matches to other health related databases.

Data from the T-MSIS will support improved program and financial management and more robust evaluations of demonstration programs. It will also enhance the ability to identify potential fraud and improve program efficiency. Ultimately, the transformed infrastructure will provide DMAS and CMS the ability to:

- Study encounters, claims, and enrollment data by claim and beneficiary attributes
- Analyze expenditures by medical assistance and administration categories
- Monitor expenditures within delivery systems and assess the impact of different types of delivery system models on beneficiary outcomes
- Examine the enrollment, service provision, and expenditure experience of providers who participate in our programs (as well as in Medicare)
- Observe trends or patterns indicating potential fraud, waste, and abuse in the programs so we can prevent or mitigate the impact of these activities

The T-MSIS will be a main source of Medicaid and CHIP operational data. Since CMS intends to use the T-MSIS data to derive reports that DMAS is currently required to submit (i.e., CMS-416 and CHIP Annual Reporting Template System (CARTS)), the number of reports and ad hoc data requests that CMS requires of DMAS will be reduced. CMS plans to introduce the ability for DMAS and other states to conduct their own analyses of data in the national repository and, eventually, compare their data with other states.

The data from the T-MSIS will enable DMAS to increase its anti-fraud, waste, and abuse activities. The Agency will be able to analyze its data, along with other information in the CMS data repositories, including Medicare data, and be in a better position to identify anomalies for further investigation.

CMS has published reporting requirements for T-MSIS on the secure CMS SharePoint site. DMAS will supply the Contractor with the source to target maps and addendum documents for the current MMIS. The Contractor will be expected to design a solution that incorporates data from the legacy MMIS where T-MSIS requires inclusion of historical data.

K.1.8 – Money Follows the Person Quarterly and Bi-Annual Reports

Enacted by the Deficit Reduction Act of 2005, the Money Follows the Person (MFP) Rebalancing Demonstration is part of a comprehensive, coordinated strategy to make widespread changes to DMAS's long-term care support systems. This initiative is part of Virginia's effort to reduce the Medicaid population's reliance on institutional care while developing community-based long-term care opportunities, enabling the elderly and people with disabilities to fully participate in their communities. The initiative seeks to: 1) Increase the use of home and community-based services and reduce the use of institutionally-based services; 2) eliminate barriers in state law, State Medicaid plans, and State budgets that restrict the use of Medicaid funds to let people get long-term care in the settings of their choice; 3) strengthen the ability of Medicaid programs to provide HCBS to people who choose to transition out of institutions; and 4) put procedures in place to provide quality assurance and improvement of HCBS.

Quality of Life Survey:

http://www.mathematica-mpr.com/~/media/publications/PDFs/mfp_designrpt.pdf

K.1.9 – Payment Error Rate Measurement (PERM)

PERM reviews three components of Medicaid and CHIP. The sample consists of FFS claims, at-risk capitation payments and beneficiaries. Each state must submit a Corrective Action Plan (CAP) to CMS within 90 days of error rate information issuance. The CAPs must address all errors identified by the PERM review and must include: 1) an analysis of the findings to identify where and why errors are occurring; 2) an analysis of the findings to determine the causes of errors in program operations; 3) steps taken to determine actions that can be implemented to correct error causes; 4) plans to implement the CAPs, including milestones, target dates, and how the corrective action will be monitored; and 5) an assessment of whether the CAPs are in place and are effective at reducing or eliminating the targeted error causes.

Please refer to:

https://www.cms.gov/Research-Statistics-Data-and-Systems/Monitoring-Programs/Medicaid-and-CHIP-Compliance/PERM/Downloads/FY2014PERMUniverseSubmissionInstruction.PDF

K.1.10 – Other Standard Reporting:

Abortions, hysterectomies, and sterilization – monthly (consent for service) and quarterly (services received).

K.1.11 – Medicaid, S-CHIP, M-CHIP populations- monthly

Demonstration population T-MSIS reports quarterly, subset of T-MSIS report includes Money Follows the Person and Commonwealth Coordinated Care participants.

Medicaid Part D: Prospective and Enrolled

APPENDIX L – GLOSSARY

The glossary of "Term Definitions" and glossary of "Acronyms and Abbreviations" subsections (below) alphabetically provide the definition or meaning of the term, acronym, or abbreviation.

L.1 – TERM DEFINITIONS

Term	Definition
A	
Adjudicated Claim	A claim that has been paid or denied by the system
Application Program Interface (API)	A set of routines, protocols, and tools for building software applications.
Atypical Provider ID	The Centers for Medicare and Medicaid Services (CMS) defines Atypical Providers as providers that do not provide health care. This is further defined under HIPAA in Federal regulations at 45 CFR 160.103. Taxi services, home and vehicle modifications, and respite services are examples of Atypical Providers reimbursed by the Medicaid program.
B	
Benefit Package	A standardized package of benefits, administered by DMAS, for service coverage, patient coinsurance and deductible, etc. associated with a particular population. A member can have multiple DMAS-defined benefit packages at one time.
C	
Claim	Usually used to refer to a bill for payment submitted by or on behalf of a provider of a health care service, supply, or product. The VAMMIS also generates claims for capitation payments, management fees, and administration fees. While in some contexts a claim can refer to the document submitted, the VAMMIS considers each service line on all forms other than a UB-04 to be a claim. Claim is included in the generic term 'payment request.' Also see 'Encounter.'
Client Medical Management (CMM)	Virginia's member "lock-in" program where over-utilizers are restricted to a single physician and/or pharmacy to medically manage access to services.
Commonwealth	The Commonwealth of Virginia; also referred to as "the State"; also referred to as "Virginia"
Computer-based Training (CBT)	A type of education in which the student learns by executing special training programs on a computer. CBT is especially effective for training people to use computer applications because the CBT program can be integrated with the applications so that students can practice using the application as they learn.

Term	Definition
Conceptual Data Model (CDM)	Identifies the highest-level relationships between the different entities.
Continuity of Operations Plan (COOP)	A plan that addresses the continuation of critical operations, to the extent practical, in the event of a disaster.
Contractor	1. The company that is awarded a contract to perform the work defined in this RFP. The term Contractor throughout this RFP is synonymous with Offeror. 2. Entity or individual(s) providing services based on mutual agreement / terms for a specified period of time.
D	
Department of Medical Assistance Services (DMAS)	DMAS is the agency that administers Medicaid and the State Children's Health Insurance Program (CHIP) in Virginia. The CHIP program in Virginia is called Family Access to Medical Insurance Security (FAMIS). Our mission at DMAS is to provide a system of high quality and cost effective health care services to qualifying Virginians and their families. DMAS is one of twelve state agencies under the Virginia Secretary of Health and Human Resources.
DMAS Technology	A component of the Virginia Medicaid Enterprise Architecture that contains all the COV's commercial hardware, systems software, and telecommunications located at DMAS. The technical components will be operated and maintained by the Virginia Information Technologies Agency (VITA).
Drug Rebate Technology	A component of the Virginia Medicaid Enterprise Architecture that contains all the commercial hardware, systems software, and telecommunications software and equipment used to support the Drug Rebate contractor's proposed business services staff and Drug Rebate system. The Drug Rebate Contractor's Technology connects with the Core VAMMIS Technology as well as DMAS Technology and would be addressed in the PBM RFP.
Detail System Design (DSD)	The DSD is the output of development, which has evolved into the systems documentation that reflects current processing.
E	
Encounter	An adjudicated claim that is sent by a Managed Care Organization (MCO), non-emergency transportation broker, Behavioral Health Administrator, or Dental Benefits Administrator (DBA), for example, to identify services it provided or denied for DMAS members.
Encounter Adjustment	A replacement of a previously submitted encounter. Currently an encounter adjustment results in the reversal of the original encounter (credit) and a newly processed encounter (debit) using the information on the adjustment. An encounter adjustment is used to correct information on a previously submitted encounter.

Term	Definition
Enterprise Content Management (ECM)	The technologies used to capture, store, preserve and deliver content and documents related to organizational processes. ECM tools and strategies allow the management of an organization's unstructured information, wherever that information exists.
Enterprise Service Bus (ESB)	A “software architecture” model used for designing and implementing communication between mutually interacting software applications in a service-oriented architecture (SOA).
eVA	eVA is a web-based purchasing system used by Virginia government. State agencies, colleges, universities and many local governments to announce proposal opportunities, invite offerors, receive quotes, and place orders for goods and services.
Extensible Markup Language (XML)	A markup language that defines a set of rules for encoding documents in a format which is both human-readable and machine-readable. It is defined by the W3C's XML 1.0 Specification and by several other related specifications, all of which are free open standards.
Extensible Stylesheet Language Transformations (XSLT)	A language for transforming XML documents into other XML documents, or other formats such as HTML for web pages, plain text or into XSL Formatting Objects, which may subsequently be converted to other formats, such as PDF, PostScript and PNG.
F	
Family Access to Medical Insurance Security (FAMIS)	This is Virginia's separate State Children’s Health Insurance Program (SCHIP) authorized under Title XXI of the Social Security Act. It generally covers eligible children with family income too high for Medicaid but less than 200% of the Federal Poverty Level.
FAMIS-Plus	FAMIS-Plus is a Medicaid expansion component of the COV’s Title XXI Children’s Health Insurance Program. Because it is a Medicaid expansion program, FAMIS-Plus follows all Medicaid rules.
Federal Financial Participation (FFP)	Federal Financial Participation (FFP) is a Title XIX (Medicaid) program that allows states to receive partial reimbursement for activities that meet FFP objectives.
Federal Information Processing Standards (FIPS)	A standardized code which uniquely identifies counties and county equivalents in the United States
Fiscal Agent (FA)	Fiscal Agent is used to refer to the VAMMIS Fiscal Agent Services contractor.
Fiscal Agent Technology (FAT)	A component of the Virginia Medicaid Enterprise Architecture that contains all the commercial hardware, systems software, and telecommunications provided and operated by the Contractor at its facilities.

H	
Hypertext Transfer Protocol (HTTPS)	An application protocol for distributed, collaborative, hypermedia information systems.
Hyper Text Markup Language (HTML)	A standard markup language used to create web pages. Web browsers can read HTML files and render them into visible or audible web pages.
I	
Information Service Request (ISR)	A formal change control document for requesting and authorizing work and changes to VAMMIS applications.
International Business Machines Corporation (IBM)	An American multinational technology and consulting corporation. IBM manufactures and markets computer hardware, middleware and software, and offers infrastructure, hosting and consulting services in areas ranging from mainframe computers to nanotechnology.
J	
Java Platform, Enterprise Edition (Java EE)	Known as J2EE, this is a widely used enterprise computing platform developed under the Java Community Process. The platform provides an API and runtime environment for developing and running enterprise software, including network and web services, and other large-scale, multi-tiered, scalable, reliable, and secure network applications.
JavaScript	A high-level, dynamic, un-typed, and interpreted programming language.
Java EE Connector Architecture (JCA)	A Java-based technology solution for connecting application servers and enterprise information systems (EIS) as part of enterprise application integration (EAI) solutions.
JQUERY	A cross-platform JavaScript library designed to simplify the client-side scripting of HTML. jQuery is the most popular JavaScript library in use today.
Java Script Object Notation (JSON)	A lightweight data-interchange format.
L	
Lock-in	See Client Medical Management (CMM).
Logical Data Model (LDM)	A model that is not specific to a database that describes things about which an organization wants to collect data, and describes the relationships among these things. It is independent of the underlying physical database implementation. The logical data model will leverage the conceptual model to include all the entities, relationships, attributes and primary and foreign keys in the design.

M	
Medallion 3.0	A Virginia Medicaid Managed Care that is a State program that provides its members with access to preventive and coordinated care.
Medicaid Portal	A single point of entry for ALL users, that uses a Single Sign-On (SSO) and directs the user to a 'landing page' that is appropriate for their credentials/role. Then the user can go to another portal, like the Provider Portal (as authorized).
Medicaid Enterprise Certification Toolkit (MECT)	The Medicaid Enterprise Certification Toolkit was developed to assist States in all phases of the MMIS life cycle beginning with the preparation of an Advance Planning Document (APD) through the certification review process. The main features of the Toolkit are the twenty (20) checklists that were developed for six (6) different Business Areas. The checklists contain the Business Area objectives and related systems review criteria necessary to meet the requirements specified in Federal and State laws and regulations.
Medicaid Information Technology Architecture (MITA)	This is an initiative sponsored by CMS and is intended to foster integrated business and IT transformation across the Medicaid enterprise to improve the administration of the Medicaid program.
Medicaid	Enacted in 1965 under Title XIX of the Social Security Act (the Act), it is a grant in aid Medical Assistance Program financed through joint Federal and Commonwealth/State funding and administered by each state according to an approved state plan.
Medicaid Management Information Systems (MMIS)	The MMIS is a mechanized claims processing and information retrieval system which states are required to have if they obtain Federal funding to run their Medicaid programs. It is an integrated group of procedures and computer processing operations (subsystems) developed at the general design level to meet principal objectives. The current Federal regulation can be found in 42 CFR 433, subpart C.
Member	An individual enrolled in one of the DMAS programs.
MMIS Core Technology	A component of the current Virginia Medicaid Enterprise Architecture that contains all the commercial hardware, systems software, COTS products integrated into the VAMMIS, and custom application software used for hosting the VAMMIS and its related documentation.
Model View Controller (MVC)	This is a software architectural pattern for implementing user interfaces. It divides a given software application into three interconnected parts, so as to separate internal representations of information from the ways that information is presented to or accepted from the user.

MQ	A robust messaging middleware that simplifies and accelerates the integration of diverse applications and business data across multiple platforms.
N	
.NET	.NET Framework (pronounced 'dot net') is a software framework developed by Microsoft that runs primarily on Microsoft Windows.
Normal Business Hours	8 A.M. – 5 P.M. ET, Monday through Friday except holidays approved by DMAS.
O	
OAuth	An authentication protocol that allows users to approve application to act on their behalf without sharing their password.
Offeror	A company or individual that presents something to another for acceptance or rejection and is also referred to as bidder. Offeror is the term used during the Procurement process to refer to the submitter of a response.
P	
Payment Request	A submission of information used to request the issuance of a payment by the MES Financial Solution.
PES Technology	A component of the Virginia Medicaid Enterprise Architecture that contains all the commercial hardware, systems software, and telecommunications software and equipment used to support the PES contractor's proposed business services staff. The PES Contractor's Technology connects with the Core VAMMIS Technology as well as DMAS Technology.
Physical Data Model (PDM)	It is the actual model which will be created in the database to store the data and is the most detailed model in Data Warehouse data modeling. The physical data model includes: table names; column names (including data type and size); primary keys, foreign keys of a table; and constraints. Physical Data Models for the EDWS will include models for the landing area, the staging area and the base data area. Physical data models include the physical data schema derived from the logical data model.
Protected Health Information (PHI)	Any information about health status, provision of health care, or payment for health care that can be linked to a specific individual. This is interpreted rather broadly and includes any part of a patient's medical record or payment history.
Personally Identifiable Information (PII)	This is Sensitive Personal Information (SPI), as used in US privacy law and information security. It is information that can be used on its own or with other information to identify, contact, or locate a single person, or to identify an individual in context.

R	
Recoupment	A payment returned by a Medicaid provider, or a full or partial recovery of such payment due to an overpayment. May be associated with over billings, fraud and abuse, TPL collections, etc.
S	
Service Center	This is the term used by DMAS for an EDI trading partner. A service center can be a clearinghouse or a provider.
Service-Level Agreement (SLA)	A performance measure designated by DMAS to identify the performance expectations of a contractor for services that are critical to the success of the Commonwealth of Virginia's Medicaid program.
Service-oriented Architecture (SOA)	This is an architectural pattern in computer software design in which application components provide services to other components via a communications protocol, typically over a network. The principles of service-orientation are independent of any contractor, product or technology.
Simple Object Access Protocol (SOAP)	A messaging protocol that allows programs that run on disparate operating systems (such as Windows and Linux) to communicate using Hypertext Transfer Protocol (HTTP) and its Extensible Markup Language (XML).
Secure Sockets Layer (SSL)	The standard security technology for establishing an encrypted link between a web server and a browser. This link ensures that all data passed between the web server and browsers remain private and integral.
Single Sign-on (SSO)	A session/user authentication process that permits a user to enter one name and password in order to access multiple applications.
State	The Commonwealth of Virginia; also referred to as "the Commonwealth"; also referred to as "Virginia"
Supplier	The term Supplier is used throughout this document in the context of an industry standard term, whose primary purpose is establishing the labeling of the source or ownership of the object being referenced. E.g. Suppliers Quarterly Report, Associate Supplier Agreement. In addition, the terminology is used in Virginia procurement related documentation in reference to a "Supplier" of goods and/or services.
T	
Temporary Detention Order (TDO)	An order obtained and issued for a person who is in imminent danger to his or herself or others as a result of mental illness, or is too seriously mentally ill to care for self and is incapable or unwilling to volunteer for treatment. DMAS administers the processing of the Temporary Detention Orders (TDO) and Emergency Custody Orders (ECOs) for authorization of payments for services provided to residents of the COV.

Trading Partner	One of the two or more participants in an ongoing business relationship.
Transaction Code Set (TCS)	Any set of codes used for encoding data elements, such as tables of terms, medical concepts, medical diagnosis codes, or medical procedure codes.
Transaction Processing Platform (TPP)	The term used in the current documentation that is equivalent to what is called the current Fiscal Agent (FA) Technology in this RFP.
Transmission Control Protocol /Internet Protocol (TCP/IP)	The basic communication language or protocol of the Internet. It can also be used as a communications protocol in a private network (either an intranet or an extranet).
U	
Universal Description, Discovery, and Integration (UDDI)	An OASIS Standard, which defines a universal method for enterprises to dynamically discover and invoke Web services.
Uniform Resource Locator (URL)	A reference (an address) to a resource on the Internet.
V	
Vendor	An entity or individual(s) providing goods or services to DMAS based on individual requests from DMAS for such items/services typically processed through Accounts Payable transactions.
Virginia Medicaid Enterprise Architecture (VMEA)	The Virginia Medicaid Enterprise Architecture is based on the Medicaid Information Technology Architecture (MITA 3.0) framework and the CMS Seven Conditions and Standards. VMEA is a modularized, highly decoupled, rule-based, service-oriented software solution. Components of the Architecture include portal management service, core services, financial management service, pharmacy benefit management service, encounter processing service and data warehouse.
Virginia Medicaid Management Information System (VAMMIS)	The Commonwealth of Virginia's solution to meet the Federal MMIS requirement for a mechanized claims processing and information retrieval system.
Virginia Information Technologies Agency (VITA)	VITA is the Commonwealth's consolidated, centralized information technology services provider.
W	
Web Services	Client and server applications that communicate over the World Wide Web's (WWW) Hypertext Transfer Protocol (HTTP). Web services provide a standard means of interoperating between software applications running on a variety of platforms and frameworks.
Web Services Description Language (WSDL)	An XML-based language used to describe the services a business offers and to provide a way for individuals and other businesses to access those services electronically
Web Services Policy Framework (WS-Policy)	Members of the core Web Services architecture specifications.

Web Services Security (WS-Security)	A proposed IT industry standard that addresses security when data is exchanged as part of a Web service

L.2 – Acronyms and Abbreviations

Note: Some items in this subsection may also be defined in glossary of Term Definitions in Section L.1 above.

A

ADR – Alternative Dispute Resolution

APA – Auditor of Public Accounts

API – Application Program Interface or Atypical Provider ID

ATV – Agency Transaction Voucher

B

BAC – Basic Accounting Code

BCCP – Business Continuity and Contingency Plans

BENDEX – Beneficiary and Earnings Data Exchange

BEST – Health Insurance Beneficiary State File

C

CAP – Corrective Action Plan

CARC – Claim Adjustment Reason Codes

CARS – Commonwealth Accounting and Reporting System

CBT – Computer Based Training

CCC – Commonwealth Coordinated Care

CDM – Conceptual Data Model

CHIP – Children's Health Insurance Program

CHIRP – Claim History Information Retrieval Processor

CIO – Chief Information Officer

CIPPS – Commonwealth Integrated Payroll/Personnel System

CMM – Client Medical Management

CMS – Centers for Medicare and Medicaid Services

COOP – Continuity of Operations Plan

COTS – Commercial, off-the-shelf

COV – Commonwealth of Virginia

CSS – Core Services Solution

D

DDE – Direct Data Entry

DDI – Design, Development, and Implementation

DMAS – Department of Medical Assistance Services

DR – Disaster Recovery

DSD – Detailed Systems Design

E

ECM – Enterprise Content Management

EDI – Electronic Data Interchange

EDWS – Enterprise Data Warehouse Solution

EFT – Electronic Funds transfer

EPSDT – Early and Periodic Screening, Diagnosis, and Treatment

ESB – Enterprise Service Bus

ETL – Extract Transform Load

EULA – End User License Agreement

eVA – Virginia's Procurement Portal

F

FA – Fiscal Agent

FAMIS – Family Access to Medical Insurance Security

FAT– Fiscal Agent Technology

FEIN – Federal Employer Identification Number

FFP - Federal Financial Participation

FFS – Fee-for-Service

FIPS – Federal Information Processing Standard (FIPS) code

FMS – Financial Management Solution

G

GAP – Governor's Access Plan

GSD – General System Design

H

HCFA – Healthcare Financing Agency

HHS – Health and Human Services

HIPAA – Health Insurance Portability and Accountability Act

HMO – Health Maintenance Organization

HTML – Hyper Text Markup Language

HTTPS – Hypertext Transfer Protocol

I

IAOC – Intra-agency Oversight Committee

IBM – Internal Business Machines Corporation

ICAM – Identity Credentials Access Management System

IEVS – Income and Eligibility Verification System

I/O – Input /Output

ISO – The International Organization for Standardization

ISR – Information Service Request

ITF – Integrated Test Facility

ITIL – Information Technology Infrastructure Library

ITIM – Information Technology Investment Management

ITSM – Information Technology Service Management

J

Java EE – Java Platform, Enterprise Edition

JCA – Java EE Connector Architecture

JSON – Java Script Object Notation

L

LDM – Logical Data Model

M

MARS – Management and Administrative Reporting System

MCO – Managed Care Organization

MECT – Medicaid Enterprise Certification Toolkit

MES – Medicaid Enterprise System

MICC – Maternal and Infant Care Coordination

MITA – Medicaid Information Technology Architecture

MLTSS – Managed Long-term Services and Supports

MMIS – Medicaid Management Information System

MVC – Model View Controller

N

.NET – .NET Framework

NEMT – Non-emergency transportation

O

ORT – Operational Readiness Testing

OAuth – Authentication Protocol

OLA – Operational Level Agreement

P

PBS – Performance Budgeting System

PBMS – Pharmacy Benefit Management System

PDM – Physical Data Model

PES – Provider Enrollment Services

PHI – Protected Health Information

PII – Personally Identifiable Information

PMD – Project Management Division

R

RA – Remittance Advice

RARC – Remittance Advice Remark Codes

REST– Representational State Transfer

RFP – Request for Proposal

RTO – Recovery Time Objective

S

SaaS – Software as a Service

SAM – System for Award Management

SDLC – System Development Life Cycle

SIT – System Integration Testing

SLA – Service-Level Agreement

SLH – State and Local Hospitalization

SOA – Service-oriented Architecture

SOAP – Simple Object Access Protocol

SOC – Service Organization Controls

SPOC – Single Point of Contact

SS-A – State Self-assessment

SSAE – Standards for Attestation Engagements

SSI – Supplemental Security Income

SSL – Secure Sockets Layer

SSO – Single Sign-On

SSP – System Security Plan

SURS – Surveillance and Utilization Review System

SWaM – Small, Women-owned, and Minority-owned business

T

TBD – To Be Determined

TCS – Transaction and Code Set

TDO – Temporary Detention Order

TPLRS – Third Party Liability Recovery System

TPP – Transaction Processing Platform

TCP/IP – Transmission Control Protocol /Internet Protocol

U

UAT – User Acceptance Testing

UAI – Uniform Assessment Instrument

UDDI – Universal Description, Discovery, and Integration

URL – Uniform Resource Locator

V

VITA – Virginia Information Technologies Agency

VMEA – Virginia Medicaid Enterprise Architecture

VAMMIS – Virginia Medicaid Management Information System

W

WSDL – Web Services Description Language

WS-Policy – Web Services Policy Framework

WS-Security – Web Services Security

X

XML – Extensible Markup Language

XSTL – Extensible Stylesheet Language Transformations