

ATTACHMENT B SCOPE OF SERVICES

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For purposes of this solicitation, the successful EDW Vendor shall be referred to as “Vendor” and “EDW Vendor”. The Contract or Purchase Order resulting from this solicitation shall be referred to as Contract.

B.1. General Overview

A. Background

The Florida Agency for Health Care Administration, hereinafter referred to as the “Agency”, is preparing for the changing landscape of health care administration and increased use of the Centers for Medicare and Medicaid Services (CMS) Medicaid Information Technology Architecture (MITA) to improve the administration and operation of the current Florida Medicaid Enterprise System (MES). The current Florida MES includes services, business processes, data management and processes, technical processes within the Agency, and those interconnections with systems residing outside the Agency necessary for the administration of the Florida Medicaid program.

The CMS released the Medicaid Program Final Rule: Mechanized Claims Processing and Information Retrieval Systems in December 2015. This final rule modifies regulations pertaining to the 42 Code of Federal Regulations (CFR) 433 and 45 CFR 95.6111, effective January 1, 2016. Among other changes, this final rule supports increased use of the MITA Framework. MITA is a CMS initiative fostering an integrated business and information technology (IT) transformation across the Medicaid Enterprise to improve the administration and operation of the Medicaid program.

The Agency rebranded the Florida Medicaid Enterprise System (MES) to Florida Health Care Connections (FX). The decision was made to reflect this project as a broader project leveraging the Medicaid infrastructure to improve overall Agency functionality and to build better connections to other data sources and programs. Moving forward, the Agency intends to use the term FX when referencing the Florida MES. This document may retain the MES name when referring to the Federal initiative known as MES. The Agency documents its high-level plans to increase service interoperability and advance the maturity of the MES in accordance with the MITA Framework in the FX Procurement Strategy document, located in the [EDW Procurement Library](#).

Florida Health Care Connections (FX) is a multi-year project that will modernize the current Medicaid technology using a modular approach while simultaneously improving overall Agency functionality and build better connections to other data sources and programs. FX will result in the ability to provide better health care by utilizing our resources, technology, and processes more efficiently and effectively. The future state of FX, which cannot yet be fully defined, will have the right technology, utilizing the right resources, based on higher quality data and more efficient processes - all of this leading to a world-class healthcare experience for all Floridians.

The components of the FX enterprise transformation are:

FX Scope - All initiatives which supply an input to or receive an output from the Agency’s mission to provide better health care for all Floridians including Recipients, Providers, Processes, and Technology;

FX Portfolio - The collection of projects to transform the Medicaid Enterprise based on the FX mission;

FX Projects - A project included in the FX Portfolio with a clear objective and defined start and finish date;

FX Vendor - A vendor working on a FX Project; and

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FX Vision - Transform the Medicaid Enterprise to provide the greatest quality, the best experience, and the highest value in health care.

1. Transforming to a Modular Processing Solution

To enable effective and responsive delivery of health-related services, the Agency is pursuing modular technology and processing solutions that work together seamlessly. Using modular solutions provides processing and operational agility to support the needs of organizations in Florida that deliver health services. A modular approach increases the opportunity to select the best technology and services from vendors while simultaneously avoiding vendor lock-in and the risks associated with a single solution.

To support this transformation, the Agency published and released the FX Procurement Strategy. The FX Procurement Strategy proposes a four-phased approach to replace the current functions of the Florida Medicaid Management Information System (FMMIS) and other Medicaid-related systems. These four phases are based on the CMS Standards and Conditions to ultimately transform Florida's Medicaid systems to an interoperable and unified system where individual processes, modules, systems, and sub-systems work together to operate the Medicaid program. The CMS Standards and Conditions must be met for States to qualify for enhanced Federal funding. This approach is intended to provide the most efficient and cost-effective long-term solution for the system while complying with Federal regulations, achieving Federal certification, and obtaining enhanced Federal funding. Phase 3 and Phase 4 are anticipated to occur concurrently. The four (4) phases of the Procurement Strategy are as follows:

- **Phase 1** is the procurement of a Strategic Enterprise Advisory Services (SEAS) Vendor and an Independent Verification and Validation (IV&V) Vendor. These procurements were completed in the fall of 2017. Information about the SEAS Vendor and IV&V Vendor can be found in **Section B.1.D. Roles and Responsibilities**.
- **Phase 2** of the Procurement Strategy establishes the technical foundation of the modular transformation through the Agency's procurement of an Integration Services and Integration Platform (IS/IP) Solution and an Enterprise Data Warehouse (EDW) Solution. **This solicitation is ONLY for the procurement of EDW Solution.**
- **Phase 3** of the Procurement Strategy leverages the technology foundation established in Phase 2 to integrate and consolidate existing data and systems. In this phase, existing Medicaid-related systems will be integrated into the infrastructure created by IS/IP and EDW and improve processing effectiveness and consistency. Use of the IS/IP enables existing systems to securely share data and processing services in near real-time across system boundaries. Use of the EDW enables systems to securely contribute, update, access, and analyze data from the single, authoritative source, efficiently, and effectively.
- **Phase 4** is the acquisition and implementation of modular processing capabilities, systems and services that upgrade, modernize and replace the functions currently performed by multiple existing systems.

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2. A Strategy Driven Approach to Transformation

Integration Services and Integration Platform (IS/IP) and the Enterprise Data Warehouse (EDW) Solution will be the foundational platforms to meet the Agency's strategic priorities. The Agency's strategy includes a plan to assimilate modular solutions to replace current functional systems or subsystems quickly and efficiently as technology evolves.

As the Agency's transformation project is not a "rip and replace" effort, the Agency is taking an iterative approach to transformation. Through strategic planning, facilitated by the SEAS Vendor and the development of Governance within the Agency, the transformation will continue to evolve over the next several years.

As part of the SEAS activities, the Agency and SEAS Vendor hereinafter referred to as the "FX Project Team", developed the strategic and technical plans and standards needed to support the FX enterprise transformation. Included in these plans are the **FX Strategic Plan** and the **MITA Concept of Operations**, located in the [EDW Procurement Library](#). The FX Project Team, used the Procurement Strategy as the basis for the development of the strategy to transform the systems over the next several years.

The Procurement Strategy is continuously being updated to reflect current information and planned activities. The Agency's iterative approach will continue to evolve, and the current Procurement Strategy, plans and standards will continue to be updated, as needed, to support this strategy-driven approach.

Additional details regarding the Procurement Strategy, Strategic Plan, and project plans are located in the [EDW Procurement Library](#).

The **FX Data Management Strategy**, located in the [EDW Procurement Library](#), defines six core data management standards to achieve the business objectives and mission of the Agency:

- **Improve data quality by operating from a single source of truth** - The current, inconsistent application of data edits, validations, and transformations to the many different Agency data stores means there is no single source of truth which causes confusion and lack of trust in the data. This procurement seeks an EDW Solution that facilitates consistent application of data management standards and federates data producing a single source of truth.
- **Evolve core processing over time with data validation at the point of business event data collection** - Future systems should plan to allow health plans and providers to validate and verify claim and encounter data before submission to the Agency.
- **Provide seamless access to a real-time, 360-degree (360°) view of recipient and provider information** - The Agency strategy is to use technology to assemble information in real-time from all relevant sources to make processing and funding decisions using a comprehensive view of recipient and provider information from other FX stakeholder organizations.
- **Decouple data from proprietary systems and application stores** - The Agency FX data management strategy is to manage data as a service with new FX modules using data access services that connect to an Operational Data Store, independent of specific systems or modules.

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- **Operate with business area and persona optimized Data Marts and data analysis tools** - As it relates to data management strategy, the persona generalizes the types and breadth of data used and processed and the types of tools used to perform a role.
- **Prepare to collect and manage recipient and provider experience and outcome data** - The Agency, health plans, and providers currently have limited recipient, provider experience, or health outcome data. The transformation of the State's Medicaid systems and processes requires the collection, storage, and analysis of these new types of data with new dimensions of analysis.

3. Transition to the Future State

The following transformation diagrams are a high-level representation of the strategy to transform the FX from the current state to the future state (these diagrams are an illustration of what an EDW Solution might look like and are not meant to be the actual outcome).

a. FX Current State

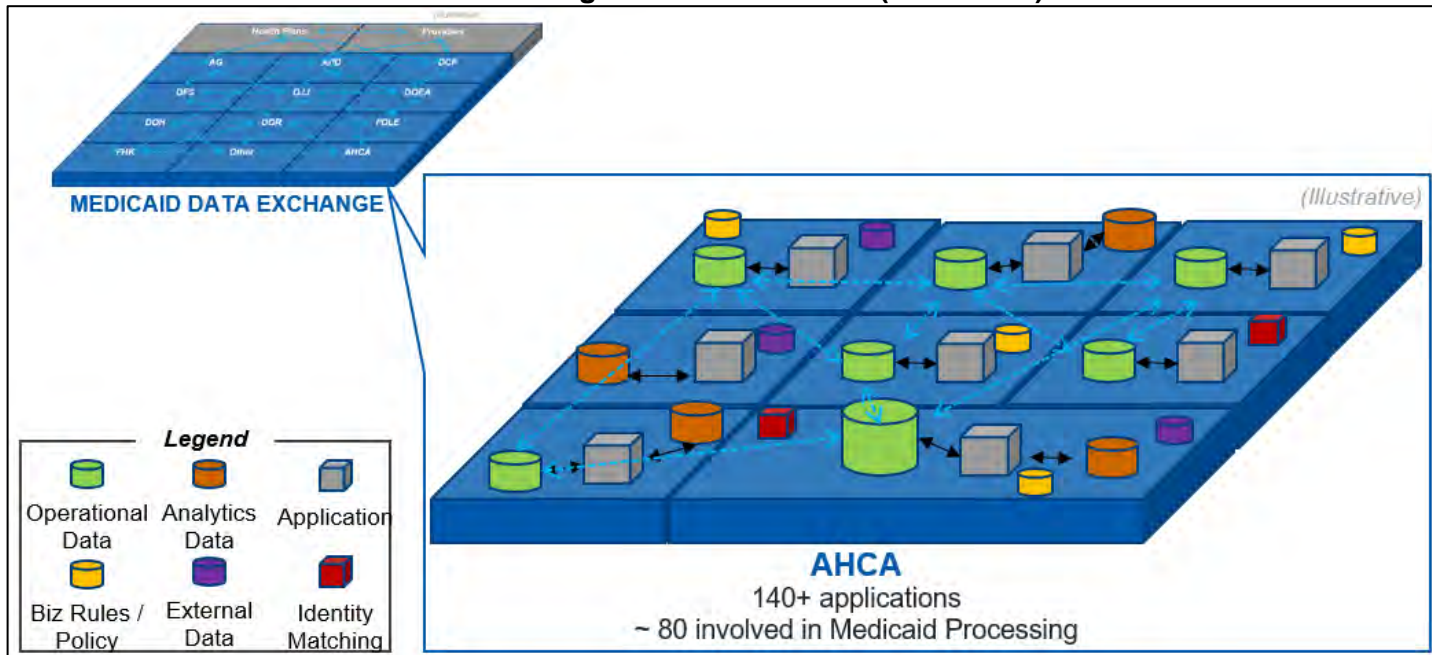
Florida's health care delivery relies on highly distributed processing by many agencies and systems. Agency silos often operate with their own version of data, tools, business rules, software, and strategies. The current data architecture is causing many data challenges. There is no "single source of truth" since each agency and system have their own data. This duplication creates challenges in how agencies share data to perform their day-to-day functions. Likewise, there are roughly eighty (80) applications within the Agency that process Medicaid data—many of which have their own data stores. This is a challenge because the data from one application may not be consistent with the data from another application. As shown in **Figure 1: Current State (Illustrative)** below, the main challenge is data stored across groups within the Agency, causing the following data integrity and availability issues:

- Multiple and often inconsistent versions of data;
- Questions about the completeness, quality, and timeliness of data;
- Poor analytic processing response times; and
- Inconsistency in use of analytics, predictive modeling, and reporting capabilities.

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Figure 1: Current State (Illustrative)



b. Future State: IS/IP

The enterprise integration capabilities of the IS/IP solution will allow Agency systems to be much more efficient in sharing data and services between systems within the Agency, with other agencies, and with partners. Two major goals of the integration platform are (1) reduced duplication of data across systems, and (2) improved data consistency and communication of data changes between systems when there is a business need for data to be duplicated.

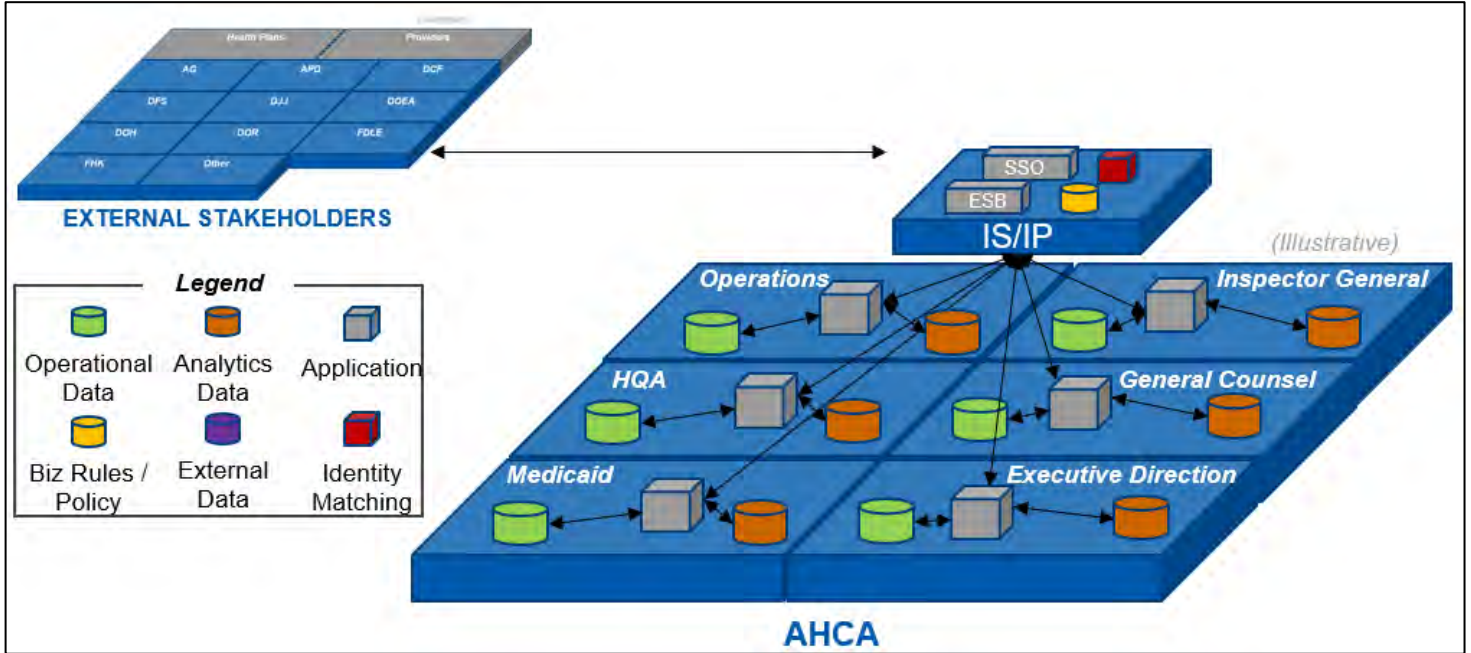
The IS/IP Future State **Figure 2: IS/IP Future State (Illustrative)** below, will enable:

- Near real-time data, processing access and sharing between different organizations and systems, reducing the propagation of duplicated and inconsistent data;
- A 360-degree (360°) view of information by linking data about recipients and providers;
- Application of consistent business rules and policy; and
- Single Sign-on and securing data in transit.

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Figure 2: IS/IP Future State (Illustrative)



c. Future State: EDW

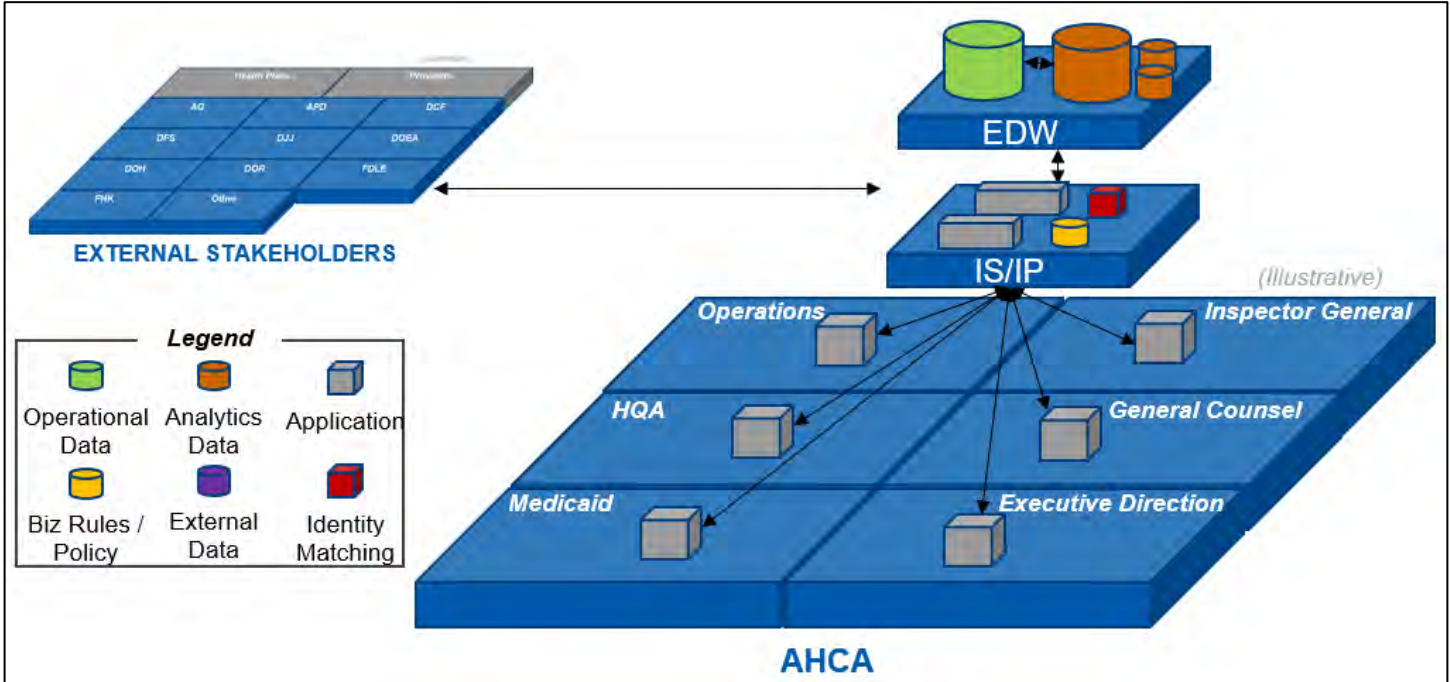
The enterprise data service and analytic capabilities of the Enterprise Data Warehouse Solution will provide Agency stakeholders with enhanced data management and analytics capabilities. The EDW creates a model that promotes having a “single source of truth” for applications to access data from this central source (rather than keeping data within each application). The implementation of the EDW Project will facilitate the decoupling of systems and data to make data available and consistent throughout the ecosystem, which will improve data quality, consistency, and tools for operational data use and analytic processing. The EDW Solution shown in **Figure 3: EDW Project Future State (Illustrative)** below, will enable:

- Single source of truth to improve data quality, accuracy, and accessibility;
- Improved timeliness and consistency of data;
- Improved analytic data processing with holistic business unit and persona optimized Data Marts and tools;
- System innovation and simplified system implementation;
- Elimination of inconsistent data and processing; and
- Reduction in duplicated data.

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Figure 3: EDW Project Future State (Illustrative)



d. Future State: Modular Processing Systems and Services

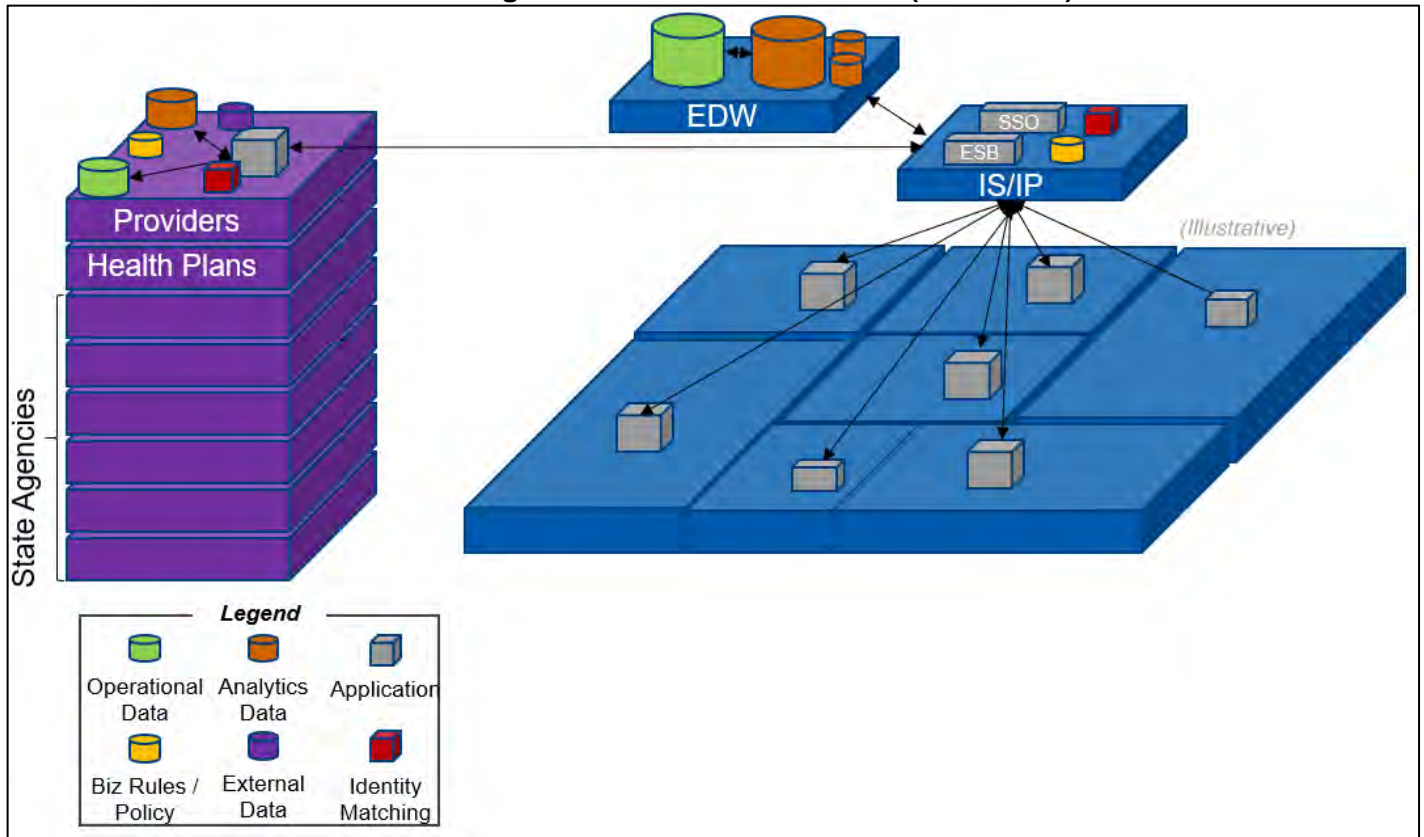
The use of modular processing systems and service capabilities using the real or near real-time data provided by the EDW Solution and applying consistent business rules, will reshape the application landscape, reducing duplicated applications and inconsistent processing. The implementation of Modular Systems shown in **Figure 4: Modular Future State (Illustrative)** below, will:

- Identify and propose improvements to mature operational business processing capabilities;
- Standardize business processing (e.g. enrollment, case management) to improve recipient and provider experience;
- Add new processing without the capacity constraints of a single vendor;
- Enable use of processing services by external organizations and systems;
- Enable high quality and accessible data;
- Improve integration with external partners;
- Reduce complexity;
- Improve focus on and measurement of health care outcomes;
- Enable holistic decision making;
- Use evidence-based processing;
- Improve analytics;
- Reduce fraud, waste and abuse;
- Improve the ease and accuracy of Provider claims payments; and

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- Improve the effectiveness of Federal cost reporting to maintain Federal funding eligibility.

Figure 4: Modular Future State (Illustrative)



B. Purpose

1. Introduction

To improve health care for all Floridians, the Agency is modernizing the foundational data management and analytic infrastructure and capabilities used throughout the Agency's healthcare ecosystem. This modernization effort will enable recipients and other stakeholders with an interest in health care to make better use of information, make better decisions, and promote better outcomes.

The Agency, health plans, providers, and external organizations that strive to deliver quality health care to Floridians rely on quality data to make decisions that affect the health care and services provided to recipients. Agency healthcare and claims data drives operational decisions made for delivering care to individual recipients, policy decisions that improve the overall health delivery system, regulatory decisions that enforce policy decisions and validate service delivery quality, funding needs, and decisions made by recipients that are engaged in their health care. Improving data quality is about providing data that is more accurate, timely, accessible, and relevant to those that use the data.

The Agency is procuring an Enterprise Data Warehouse solution that provides a comprehensive data management and reporting solution to advance the Agency's goal of transforming to an Enterprise, Modular, and flexible solution. The Agency is procuring the following to meet this requirement:

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- 1) Hardware;
- 2) Software;
- 3) Hosting and support services;
- 4) Data stores;
- 5) Data management;
- 6) Data analytics and tools; and
- 7) Optimized analytics and reporting.

2. Vision

Part of the Agency's vision as it relates to healthcare data is to enable all authorized stakeholders to provide and access data from a single source of truth. The single source of truth for operational data will contain high quality information that is complete, accurate, and reflects the real-time events, transactions and information, given the subject of interest (e.g. recipient, provider, health plan, illness, disease, treatment). The Agency's vision is for all organizations to capture information at the point of a business event or transaction and store the authenticated information directly into an Operational Data Store, available to authorized users in Florida's healthcare ecosystem. The real-time Operational Data Store will become the foundation of analytic processing that supports the needs of the Agency and external stakeholders.

Analytic Data Stores derived from the real-time operational data will be available and organized in ways to use tools optimized to the analytic processing needs of each stakeholder business unit. Data Marts and tools will be available to analyze recipient health, provider processing, disease occurrence and treatment outcomes, fraud investigations, population health, and other types of analysis. The vision is for analytic information and processing to be done in near real-time allowing timely actions based on data driven insights.

With this solicitation, the Agency is procuring the foundational FX data stores which will support the transformation from the monolithic Medicaid system to Florida Health Care Connections (FX) Vision, creating a modular enterprise health care management solution, leveraging the FX capabilities and functions to advance the business operations of all areas of the Agency.

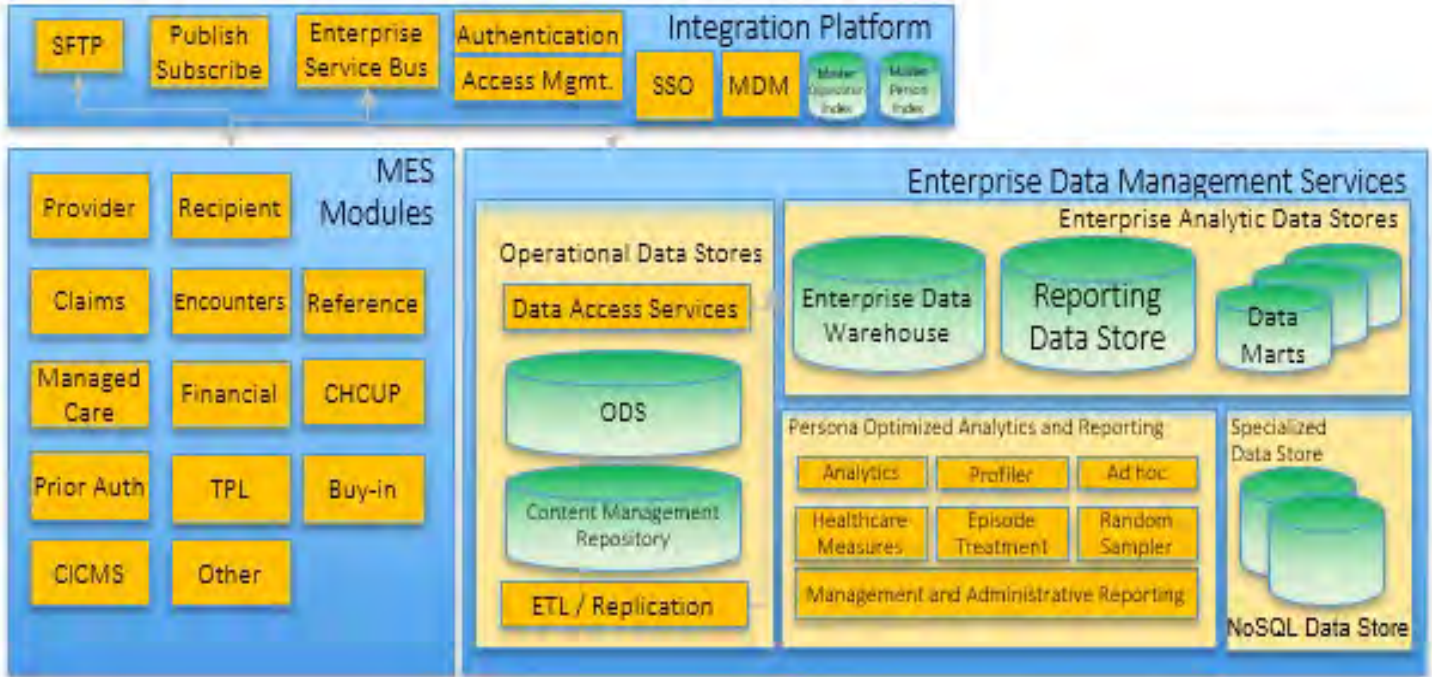
The Integration Platform will serve as the centralized communication hub and platform for the modular FX, through which all future FX modules will communicate and integrate. The Integration Services function will orchestrate and coordinate the connection to and communication paths with the FX by integrating into the Integration Platform and the EDW Solution.

The EDW Project provides a common platform for the future modules to store and access data, enabling greater information sharing, optimized data access, enhanced data integration, increased security and privacy, and strengthened query and analytics capabilities. The EDW Project includes designing, building, configuring, and implementing the Data Management Strategy for the FX. Properly implemented, the EDW Project will support all of the FX Enterprise data stores and will eliminate the need for creation, distribution, and storing of duplicate data feeds to stand-alone systems and reports, as well as enable the transformation of the State's Medicaid services.

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The success of the EDW Project will be achieved by taking an enterprise approach to transforming the management of FX data stores. The awarded Vendor will serve as the FX data store integrator to plan, schedule, test, and validate connection to the EDW Solution for all future Module Vendors.

Figure 5: FX Conceptual Level Diagram



The EDW System as shown in **Figure 5: FX Conceptual Level Diagram** above, as currently envisioned, is comprised of the Operational Data Store (ODS), the Enterprise Analytic Data Stores, the Persona Optimized Analytics and Reporting component, and Specialized Data Stores. The conceptual diagram requests a solution that will address the challenges presented by FX Current State. By providing a single solution for all transactional data and digital content retained by the Agency, the Operational Data Store (ODS) and Content Management Repository strives to resolve the data inconsistencies and multiple versions of “truth” present in the current state.

The Enterprise Analytic Data Store is comprised of the Reporting Data Store (RDS), the Analytic Data Store (ADS), and various Data Marts. These components will provide rapid and timely access to high quality data captured from the Operational Data Store (ODS) via well-defined replication and Extract Transform Load (ETL) processes.

The Persona Optimized Analytics and Reporting component will provide a unified set of tools intended to create consistent analytical, modeling, and reporting processes thereby increasing confidence in the reports and models produced by and for the Agency.

The Specialized Data Stores (SDS) round out the EDW Solution by providing the capability to efficiently produce data structures and data stores to meet specialized needs of the Agency, e.g. data requests from external entities such as other State agencies, academic institutions, and media outlets.

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Together, these components form a cohesive and effective response to the Agency's need for reliable, accurate, and timely data while also addressing the need for dependable analytics and predictive modeling and forecasting.

3. Approach

The Agency is pursuing a transformative approach to become a data-centric organization. Data has always been critical to the work the Agency, health plans, providers, and external organizations perform. The Agency is changing its treatment of data as an asset to the healthcare ecosystem. Historically, data was a component embedded within a specific sub-system, focused on specific business processes. Applications and data were tightly linked, often as isolated islands specific to a business unit or business process. When the Agency replaced applications or the vendors providing processing services, the process to convert or migrate data for use in a new system was complex and difficult.

The approach the Agency is pursuing in its vision is to change the relationship between data and systems. The Agency seeks to make healthcare data a permanent asset that is managed and retained regardless of systems or organization using the data. The centralization of this important asset will provide a single source for consistent data validation and application of business policy. With this approach, the Agency expects better data quality, expanded use throughout the healthcare ecosystem, and increased innovation from stakeholders and the vendor community to improve health care for all Floridians.

The EDW vision recognizes that there are currently—and will likely be ongoing—technical and organizational boundaries requiring data be stored in multiple data stores. The Agency is implementing an Integration Services / Integration Platform (IS/IP) solution to allow information to be stored in multiple data stores in the EDW in a manner consistent with the Agency's vision. The IS/IP solution will provide near real-time connectivity to external data sources allowing redundant information to be accessed and presented in a cohesive view in near real-time. The use of integration services to assemble and consolidate data from multiple sources will help the Agency achieve some of the benefits of its vision as the operational data store grows, and duplicated data is reduced. Over time as operational data is decoupled from application systems, the expectation is the IS/IP platform will integrate fewer and fewer sources (only those external to the Operational Data Store).

Industry technology trends aligned with the EDW vision (e.g. the use of Blockchain) anticipate that eventually all stakeholders in the healthcare ecosystem will contribute and access information from a secure single source. Therefore, the EDW vision as discussed in the Data Management Strategy, contemplates that health plans, providers, and external organizations may ultimately operate from the single source of truth thus reducing internal duplication and processing delays.

4. High Level Scope

The Agency seeks qualified vendors to provide an Enterprise Data Warehouse solution that will serve as the foundational platform for the FX Enterprise, support data management strategy, improve data quality, and increase data reliability. The Agency requires an integrated, expandable, modular EDW solution that aligns with our FX Strategic Plan. Specifically:

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a. Operational Data Store Management

- 1) Solution - provide a technology solution including infrastructure, hosting, software to meet the operational data management needs of Agency systems; provide operational data solution organized by subject area to support high volume, large data needs of the healthcare ecosystem; and provide data services to access operational data in the ODS.
- 2) Professional Services - includes initial and ongoing maintenance, upgrades and operational support of the ODS, support for future system use of ODS and ODS data services, data conversion and migration support to modernize existing systems to use ODS data services, and user training of the solution.

b. Analytic Data Management and Tools

- 1) Solution - provide a technology solution including infrastructure, hosting, and software to meet the analytic processing needs of Agency business units. Solution components include a Reporting Data Store (RDS) used for real-time dashboards and ad hoc access, an Analytic Data Store (ADS) for standard analytics, Data Marts optimized for specific business units or types of analysis, specialized Data Marts (e.g. dynamic Data Marts to address specialized analysis), and the Persona Optimized Analytics and Reporting (POAR) capabilities.
- 2) Professional Services – includes initial and ongoing maintenance, upgrades, operations and support of the RDS, ADS, Data Marts, specialized Data Marts, POAR, migration of business units to use new analytic data solutions, analytic tools, and ongoing user training of the solution.

c. Content Management

- 1) Solution - provide a technology solution including infrastructure, hosting, and software to meet the content data management needs of Agency systems, provide scanning equipment, and workflow solutions to support content ingestion processes.
- 2) Professional Services - includes operation of the enterprise content management solution, redaction processes, migration or consolidation of content in redundant content management solutions and user training of the solution.

d. Data Management / Organizational Transformation

- 1) Solution - provide a technology solution to enable managing change and evolution of the data assets of the EDW Solution and tools to enable systems and stakeholders to use the EDW Solution.
- 2) Professional Services - includes the evolution of the Data Stores as new data types and sources are integrated to the EDW Solution, consolidation of system specific Data Stores into the EDW Solution and user training of the solution.

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5. Anticipated Implementation Approach

The Agency recognizes that implementing the modernizations to achieve the Agency's mission through "A healthcare system that empowers consumers, that rewards personal responsibility and where patients, providers, and payers work for better outcomes at the best price," involves considerable complexity, coordination, and communication. Implementing the Agency's vision will need the best thinking, highest quality delivery of services, and persistent focus on improving healthcare outcomes. The Agency seeks the best solution and services of the vendor community and is open to recommendations for implementation.

The Agency's approach is to implement the following solutions and services:

a. Operational Data Management

- 1) Establish the modernized operational data management platform (ODS, content management);
- 2) Migrate systems to use the operational data platform beginning with first new module / system being implemented;
- 3) Migrate existing Agency systems data to the ODS and use data services to access the ODS; and
- 4) Migrate external systems data to the ODS and use data services to access the ODS.

b. Analytic Data Management

- 1) Establish the modernized analytic data platform
 - a) Reporting Data Store;
 - b) Analytic Data Store; and
 - c) Primary Data Marts.
- 2) Migrate business units to the modernized analytic data platform in phased implementations. Phases are prioritized by business value

c. Content Management

- 1) Implement content federation or content store consolidation at the Agency level; and
- 2) Implement automated data redaction processes.

d. Data Management Organizational Transformation

- 1) Data Management driven organizational changes; and
- 2) Modernized Data Governance processes within the FX Ecosystem.

C. EDW Procurement Library

The [EDW Procurement Library](http://ahca.myflorida.com/procurements/index.shtml) and the corresponding EDW Reference Guide are located at <http://ahca.myflorida.com/procurements/index.shtml>, and provide important information regarding guidelines and standards related to the FX enterprise transformation. These documents provide essential information needed for this Contract. These documents may be updated, and new documents may be added throughout the FX Project work to reflect the most current information and management processes as

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the FX Projects progress. A list of these documents, the file names, and a short description for each document can be found in **EDW Reference Guide** located in the [EDW Procurement Library](#).

Vendors are encouraged to review the FX Project documents located in the [EDW Procurement Library](#), and will be expected to adhere to and follow all standards, including updates and new documents, for the entirety of this Contract.

D. Roles and Responsibilities (Summary)

Many organizations and vendors have different roles and responsibilities implementing and supporting the FX enterprise transformation. This section summarizes major responsibilities of each organization.

1. Agency FX Team

The Agency is responsible for the administration of the Florida Medicaid Program, communication with Legislature, CMS and FX Stakeholders, licensure and regulation of Florida's health facilities, accurate financial management and reporting, and for providing information to Floridians about the quality of care they receive. Specifically, for this project, the Agency is responsible for contract management and oversight of all the FX Vendors.

2. Centers for Medicare and Medicaid Services (CMS)

CMS is the Federal Agency responsible for the review and approval of the new FX planning and solicitation documents, release of enhanced Federal Financial Participation, and the Certification of new modules or components of the FX.

3. Strategic Enterprise and Advisory Services (SEAS) Vendor

The SEAS Vendor is responsible for serving as the Agency's strategic, technical, and programmatic advisor and facilitate the implementation of the FX Portfolio. From a project life cycle perspective, for a new module, the SEAS Vendor initiates, plans, and develops procurement-level requirements for the multiple FX Projects, as well as operates the Enterprise Project Management Office (EPMO).

4. Independent Verification & Validation (IV&V)

The IV&V Vendor is responsible for providing a rigorous independent process which evaluates the correctness and quality of the FX Portfolio business products to verify they are being developed in accordance with Agency and CMS requirements and are well-engineered. The IV&V Vendor reports its findings directly to the Agency's IV&V Contract Manager, the Florida's Agency for State Technology (AST), and CMS.

5. Integration Service and Integration Platform (IS/IP) Vendor

The Integration Services and Integration Platform (IS/IP) Vendor is responsible for providing technical expertise to enable and confirm interoperability of FX modules. The IS/IP Vendor shall collaborate and cooperate with the FX Project Team, EDW Vendor and Module Vendors as well as FX stakeholders. The IS/IP Vendor shall design, develop, implement, and operate the Integration Platform and provide ongoing support and services to assist the Agency and the future Module Vendors in connecting and communicating with the Integration Platform.

6. Enterprise Data Warehouse (EDW) Vendor

The Enterprise Data Warehouse (EDW) Vendor is responsible for designing, developing, implementing, and operating the EDW Solution and providing ongoing support and services to assist the Agency and the Module Vendors in

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connecting and communicating with the EDW. The EDW Vendor shall coordinate with the IS/IP Vendor and Module Vendors. The EDW Vendor shall support all IV&V activities and requests as directed by the Agency for the duration of this Contract.

7. FX Module Vendors

The FX Module Vendors provide best-in-class modular Medicaid solutions. The FX Project Vendors shall coordinate with the EDW Vendor and IS/IP Vendor to integrate and test the end-to-end FX functionality. FX Project Vendors are responsible for their modular components and connecting to the Integration Platform and EDW Solution. FX Project Vendors shall use the Integration Services and Integration Platform (IS/IP) and EDW Solution for communicating with other FX modules.

8. Governance

The FX enterprise transformation is highly complex due to the potential volume of decisions, approvals, and issues which may need resolution. The challenges of integrating multiple vendors and projects, disruptions due to strategic realignment of the FX Portfolio, and uncertainties associated with legislative and political environments contribute to the complexity. If not managed effectively, this large transformation will struggle to meet its objectives, timelines, and budgets. To effectively manage the complexity arising out of this large transformation, a governance structure and process has been developed and is documented in the **FX Governance Plan**, located in the [EDW Procurement Library](#).

The EDW Vendor shall comply with the most current **FX Governance Plan** and adhere to the Agency's governance framework.

E. Procurement Restrictions

The Procurement Restrictions are provided in **Attachment A**, Instructions and Special Conditions Section A.1., Instructions, Sub-Section A., Overview, Item 13. Program Overview, Table 2, Procurement Restrictions.

B.2. Services Provided by the Agency, SEAS, and IS/IP Vendor

A. Agency Services

The Agency will provide services to facilitate the EDW Vendor in meeting the requirements of this Contract through a dedicated Agency Contract Manager. Services include Vendor access to the appropriate enterprise systems, Agency network, Agency-hosted document repository, provider handbooks, policies, procedures and other documentation, and project materials as deemed appropriate by the Agency to provide services under this Contract including:

- Historical and current MITA State Self-Assessment (SS-A) documentation; Agency-hosted document repository libraries;
- User and technical training in the appropriate use of FX and Agency IT Systems, if needed;
- Clarification and interpretation of the terms and conditions of this Contract, policies and procedures and provider handbooks as needed;

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- Access to Agency participants, stakeholders, business process owners; monitor and enforce Vendor compliance with Contract requirements and Scope of Services; and
- Timely review and approval of deliverables and relevant documents submitted by the Vendor.

B. Services Provided by SEAS Vendor

The SEAS Vendor serves as an advisor and partner to the Agency and provides ongoing strategic, governance, technical, programmatic advisory services, investment estimates, and funding requests to develop the FX Projects, FX Portfolio, and FX Scope. The SEAS Vendor also provides services to facilitate Vendors in meeting the requirements of their Contract, including: enterprise project management services; programmatic advisory services; MITA assessment and planning; initiation of FX Projects; assessment of Vendor Project Management Office (PMO) compliance; facilitate User Acceptance Testing; manage the Medicaid Enterprise Certification process and reviews; and enterprise data security management.

Develops, documents, and maintains Technical Services such as:

- Data Management Strategy;
- Information Architecture;
- Conceptual Data Model (CDM);
- Logical Data Model;
- Information Capability Matrix;
- Data Standards;
- Technical Management Strategy;
- Design and Implementation Management Standards and Oversight;
- Technology Standards; and
- Enterprise Data Security Plan.

C. Services Provided by the IS/IP Vendor

The Agency is procuring the services of an integration platform solution and integration platform services (IS/IP) Vendor. The IS/IP Vendor provides the following services to facilitate the EDW Vendor in meeting the requirements of this Contract.

1. Integration Platform Solution

The IS/IP Vendor designs, builds, configures, and implements the Integration Platform for the FX enterprise transformation. The IS/IP Vendor establishes Integration Platform services to enable component integrations based on the standards identified by the FX Project Management Standards, FX Technical Management Strategy, Technology Standards, Data Standards, and Enterprise Data Security Plan. This Platform enables the seamless integration of multiple modular components including Commercial-off-the-Shelf (COTS) software, Software-as-a-Service (SaaS) solutions, and additional modules.

The IS/IP Vendor performs the configuration, implementation, support, and maintenance of the Enterprise Service Bus (ESB), Master Data Management (MDM), Managed File Transfer (MFT), Business Rules Engine (BRE), and Single Sign-on (SSO) solutions. The IS/IP Vendor coordinates with the Module Vendors for the development of the architecture for integration capabilities to support FX

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Projects, including the data coming in through the ESB into the Operational Data Store (ODS) and eventually transformed into the Enterprise Analytic Data Store, and other modules.

The IS/IP Vendor supports the following:

- Processing accuracy (e.g. Identity Matching, MDM, ESB);
- High-speed processing at extremely large-scale volumes;
- Efficient module and external system integration and processing;
- Simplify configuration, policy, process, maintenance, and testing;
- Services versioning, reuse, and rapid deployment; and
- Protected and secure FX data and assets.

The IS/IP Vendor provides Integration Platform solution to include the following components:

- a. Enterprise Service Bus (ESB);
- b. Service Management;
- c. Managed File Transfer (MFT);
- d. Business Rules Engine;
- e. Security;
- f. Master Data Management (MDM);
 - 1) Master Person Index (MPI); and
 - 2) Master Organization Index (MOI).

2. Integration Services Solution

The IS/IP Vendor provides iterative professional Integration Services focused on meeting the Agency's needs for interoperability, enterprise integration, and technical coordination of module/module component implementations for the FX. The IS/IP Vendor implements the integration framework based on the standards identified by the Technology Standards, FX Data Management Strategy, FX Technical Architecture Documentation, and FX Technical Management Strategy, located in the [EDW Procurement Library](#). The IS/IP Vendor verifies the integrity and interoperability of the FX IT architecture and cohesiveness of the various modules incorporated into the FX. To support the Agency's objectives, the new Integration Services solution shall include the following:

- a. Systems Interoperability;
- b. Interface Integration; and
- c. Legacy System Transition Integration.

B.3. Services Provided by the EDW Vendor

A. Introduction to Requirements

To be successful in the overall implementation, integration, and operation of modular solutions which involves many vendors, the Agency and modular solution vendors benefit greatly from consistency in:

- Communication;

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- Standards;
- Processes;
- Artifacts;
- Requirements; and
- Understanding of Responsibilities.

The FX Project Team has defined the Florida Health Care Connections (FX) Program Life Cycle (FXPLC). The FXPLC is an important FX Project asset which improves and helps achieve the consistency needed for efficient interactions among everyone involved. The FXPLC, which is closely aligned with the CMS eXpedited Life Cycle (XLC), provides standard terminology and a single source of understanding of the phases, activities, artifacts produced, applicable standards and compliance expectations, and organizational responsibilities that occur during the implementation of FX Projects.

This EDW Scope of Services is structured to articulate the requirements and expectations for the:

- Business outcome requirements;
- Business process requirements;
- Solution components provided by the EDW Vendor; and
- Professional services required to implement and operate the EDW Solution.

Vendor “Services” and “Technology Solutions” are presented in multiple forms. Requirements which are “FX Enterprise” span all of the FX enterprise transformation projects. FX Enterprise requirements are meant to provide standardization across the FX solicitations to keep common requirements consistent from vendor to vendor.

“Contract Wide” requirements will be specific to this solicitation. There are many Contract Wide requirements that apply to all solution components and to the professional services performed to implement and operate the EDW Vendor’s solutions. This Scope of Services is designed to group those Contract Wide requirements together to minimize duplication of content and support response completeness.

“FX Project” requirements are specific to a project within the vendor’s solution or services. The following sections describe the requirements for the solutions and services the EDW Vendor shall provide. The EDW Vendor shall provide solutions and services as one or more FX Projects. To facilitate reuse and efficient cross project communications, the FX Project Life Cycle defines standard project life cycle phase activities, project artifacts, standards, processes, and organizational responsibilities.

Additional requirements will be “Component Specific” requirements. Component Specific requirements are those requirements which are specific to a component within the vendor’s solution or services, and usually are not found in other areas of the solicitation.

The requirements described for the solution and services are organized to communicate requirements applicable to all projects, project life cycle activities, project artifacts and solution implementations for the FX Enterprise; Contract Wide, FX Projects and Component Specific requirements. The requirements in this section (**B.3**) are organized in sub-sections as follows:

- Business Outcome Requirements;
- Business Requirements;
- User Requirements;

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- Solution Requirements;
- Services Requirements;
- Vendor Staffing Requirements; and
- Contract Requirements.

Section B.3.F.8. Deliverable Requirements describes the anticipated artifacts and deliverables produced by the EDW Vendor under this Contract. The full listing and details of the Deliverables are in **Section B.3.F.8.** The Deliverable Crosswalk is located in the [EDW Procurement Library](#) and communicates where the deliverables are referenced within the solicitation.

B. Business Outcome Requirements

Business Outcome requirements are direct changes in the results achieved or costs the Agency incurs to deliver healthcare and Medicaid services.

1. Mandatory Business Outcomes

The following business outcomes requirements are mandatory for the EDW Vendor's Solution and Services:

The Vendor shall propose any commitments to achieve specific business outcomes that result in improved delivery of healthcare services or cost. Any agreed upon and accepted commitments will be documented during negotiations as part of the best and final offer.

2. Targeted Business Outcomes

The EDW Vendor's Solution and Services shall enable the Agency to achieve the desirable business outcomes.

Examples of targeted outcomes include:

- Eliminate costs of collecting and securing duplicate data;
- Reduce complexity;
- Reduce manual processes;
- Facilitate a holistic evidence-based decision-making process;
- Reduce payment errors using prepayment analysis; and
- Eliminate cost of duplicate analysis performed by different stakeholders.

3. MITA Maturity Outcomes

It is expected that the EDW Vendor's Solution and Services shall help the Agency to achieve higher MITA Maturity Levels (current Maturity Levels can be found in the 2018 SS-A, located in the [EDW Procurement Library](#)):

The Vendor shall describe its solutions and propose any commitments to achieve higher MITA Maturity levels. Any agreed upon and accepted commitments will be documented during negotiations as part of the best and final offer.

C. Business Requirements

Business requirements are general statements describing what the stakeholders must do to fulfill the Agency's State and Federal mandates, business objectives, and strategic objectives. The business requirements provide the business context and functionality expectations for the solutions and services provided by the EDW Vendor.

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1. Component Specific Business Requirements

The EDW Vendor shall provide a solution to meet the following business requirements of the Agency.

Table: 1 - Component Specific Business Requirements below, summarizes the Component Specific Business Requirements for this Scope of Services.

Table: 1 - Component Specific Business Requirements	
Req ID	Requirement
BR-001	The Vendor's solution shall provide data management, business intelligence, and analytic capabilities to support the management of FX Projects and FX data.
BR-002	The Vendor's solution shall provide reporting and analytic tools that support the Agency's Strategic Objectives.
BR-003	The Vendor's solution shall provide reporting and analytic tools that support the Agency's operational, policy, and regulatory decisions.
BR-004	The Vendor's solution shall provide timely data management, business intelligence, reporting, and analytic information to support FX Portfolio business processes (e.g. real-time, near real-time, daily, weekly, monthly, quarterly, and annually).
BR-005	The Vendor's solution shall provide current and historical Claims, Recipient, Provider, and other supporting tools and data to management for fiscal planning and control.
BR-006	The Vendor's solution shall retain and make available all data necessary to support the financial activities of the Agency.
BR-007	The Vendor's solution shall support data storage and retrieval requirements for all Agency, State and Federal Reporting, and Audit requirements.
BR-008	The Vendor's solution shall provide an audit trail of all inquiry, insert, update, and delete transactions performed on any data retained by the solution. Audit records shall capture the responsible user or process, date and time of change, the status of the record, and "before" and "after" snapshots of the affected record.
BR-009	The Vendor's solution shall provide an audit trail for all query transactions, including read only access of Protected Health Information (PHI) or protected fields that identify the responsible user or process, date and time of change, and the status of the record.
BR-010	The Vendor's solution shall support the storage of all data types listed in the FX SEAS Data Type artifact, located in the EDW Procurement Library .
BR-011	The Vendor's solution shall support the storage of and provide business intelligence and a data analytic processing platform for all data types listed in the FX SEAS Data Type artifact, located in the EDW Procurement Library .
BR-012	The Vendor shall design, develop, and implement a solution for Public Records requests; the solution shall provide redaction capabilities, and shall support the provision of accurate responses within the timeframes mandated for Public Records requests by Federal, State, and Agency laws and policies.

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Table: 1 - Component Specific Business Requirements	
Req ID	Requirement
BR-013	The Vendor shall not use any proprietary services, protocols, or file structures without the written prior approval of the Agency.

2. Reporting Requirements

The EDW Vendor shall provide a solution to support Agency business unit responsibilities and requirements to produce and provide stakeholders with information using data stored by the Agency.

Table: 2 - Reporting Requirements below, summarizes the Reporting requirements for the EDW Project.

Table: 2 - Reporting Requirements	
Req ID	Requirement
BR-014	The Vendor shall provide a reporting solution that meets multiple business needs across the entire Agency. The reporting solution shall comply with all Federal and State reporting requirements and provide an array of reporting and analytic tools.
BR-015	The Vendor shall implement a reporting solution (reports and tools) that include: <ul style="list-style-type: none"> • Dashboards; • Ad hoc queries; • Pre-defined reports (Static and Parameterized); • Data mining; • Data extracts to other tools; and • Other reports as directed by the Agency.
BR-016	The Vendor supplied dashboards and reports shall comply with Agency standards for look and template design.
BR-017	The Vendor shall update dashboard and report templates as requested by the Agency.
BR-018	The Vendor shall implement a reporting solution (reports and tools) to include the ability to conduct: <ul style="list-style-type: none"> • Descriptive analysis; • Diagnostic analysis; • Predictive analysis; and • Prescriptive analysis.
BR-019	The Vendor shall implement a reporting solution (reports and tools) capable of conducting the following analysis: <ul style="list-style-type: none"> • Behavioral; • Geospatial; • Statistical; • Data Visualization; • Actuarial; • Fraud and Abuse; • Natural Language; • Survey; • Population Health;

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Table: 2 - Reporting Requirements	
Req ID	Requirement
	<ul style="list-style-type: none"> • Socio Cultural; • Longitudinal; and • Image Data.
BR-020	<p>The Vendor's solution shall automate the production (where possible) of the latest version of Federally required reports including:</p> <ul style="list-style-type: none"> • CMS 21 (Children's Health Insurance Program (CHIP) Expenditures); • CMS 21B (CHIP Budget); • CMS 37 (Medicaid Program Budget); • CMS 64 (Quarterly Medicaid Expenditures); • CMS 372 (Annual Waiver Report); • CMS 372 S (Annual Home and Community-Based Services "HCBS" Waiver Report); • CMS 416 (Annual Early, Periodic, Screening, Diagnostic, Treatment (EPSDT) Report); • CMS Annual Hospice Report; • CMS Disproportionate Share (DSH); • CMS Drug Utilization Review Annual Report; • Transformed Medicaid Statistical Information System (T-MSIS); • Other reports identified by the Agency.
BR-021	<p>The Vendor's solution shall facilitate data analysis needs or produce reports required by Florida Statute for the Agency to submit which include:</p> <ul style="list-style-type: none"> • Emergency Department visits; • Expenditures; • My Florida Rx; • Prescribed Drug Services Spending Control Initiative; and • Other reports identified by the Agency.
BR-022	<p>The Vendor's solution shall support all functionality required to comply with Federal Management and Administrative Reporting System (MARS) requirements.</p>
BR-023	<p>The Vendor's solution shall provide tools and reports that meet or exceed all Federal Surveillance and Utilization Review System (SURS) standards for compliance.</p>

3. Business Unit Specific Requirements

The EDW Vendor shall provide a solution that meets the specific requirements for individual business units within the Agency.

Table: 3 - Business Unit Specific Requirements below, summarizes the Business Unit Requirements for the EDW Solution.

Table: 3 - Business Unit Specific Requirements	
Req ID	Business Unit
BR-024	<p>The Vendor's solution shall provide Data Stores that are optimized to the data needs of the Agency.</p>

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Table: 3 - Business Unit Specific Requirements	
Req ID	Business Unit
BR-025	The Vendor's solution shall have the functionality to combine data on multiple dimensions to reveal proximity in two or more dimensions.
BR-026	The Vendor's solution shall have the functionality for authorized users to select data from a large dataset and enrich the data by creating calculated fields and combining the data with additional datasets.
BR-027	The Vendor's solution shall have the functionality for authorized users to create models using advanced analytic tools like SAS®, SPSS®, R, etc.
BR-028	The Vendor's solution shall have the functionality for authorized users to analyze data from multiple data sources both within and outside the Agency to merge for analysis.
BR-029	The Vendor's solution shall have the functionality to produce reports of varying levels of detail that support drill-down capabilities, multiple cross-tabulations (e.g. by demographics, geography, and health plan), sub setting, modeling, and forecasting.
BR-030	The Vendor's solution shall retain all data necessary to calculate rate-based reimbursement (e.g. hospitals, institutional, and health plan capitation, etc.).
BR-031	The Vendor's solution shall provide an unduplicated count of recipients and providers by defined groups, demographics, regions, and other criteria.
BR-032	The Vendor's solution shall provide the ability to forecast future recipient enrollment based on historical trends, population growth, programmatic changes, and proposed legislation.
BR-033	The Vendor's solution shall provide the ability to forecast future expenditures based on historical trends, population growth, programmatic changes, and proposed legislation.
BR-034	The Vendor's solution shall provide the ability to analyze historical data using defined parameters to project future enrollment (e.g. Medicaid, Health Plan, Provider, etc.).
BR-035	The Vendor's solution shall provide the ability to analyze historical data using defined parameters to project future expenditures.
BR-036	The Vendor's solution shall provide the ability to analyze historical data using defined parameters to project future utilization of healthcare services by recipients.
BR-037	The Vendor's solution shall provide the ability to analyze historical data using defined parameters to project future health outcomes expected.
BR-038	The Vendor's solution shall provide the ability to report expenditures by defined groups, demographics, regions, and other criteria.
BR-039	The Vendor's solution shall provide monitoring of compliance and performance benchmarks in health plans' contracts.
BR-040	The Vendor's solution shall provide the review, comparison, and evaluation of care management processes to support quality improvement strategies.

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Table: 3 - Business Unit Specific Requirements	
Req ID	Business Unit
BR-041	The system shall provide evaluation of Health Care Effectiveness Data and Information Set (HEDIS) and other performance metrics derived by health plans and regions.
BR-042	The Vendor's solution shall manage, store, provide, and support processes related to claims and encounter data from providers and health plans.
BR-043	The Vendor's solution shall provide the analysis of financial reports (quarterly and annually) from health plans regarding solvency, medical loss ratios, utilization ratios, and company health.
BR-044	The Vendor's solution shall be able to report on health plan financial reporting by plan, region, and statewide.
BR-045	The Vendor's solution shall meet the data management, analytic, and reporting capabilities that support the reporting and analysis of current Agency cash flow.
BR-046	The Vendor's solution shall meet the data management, analytic, and reporting capabilities that support tracking, reporting, and analysis of accounts receivables established, active, closed, and settled.
BR-047	The Vendor's solution shall meet the data management, analytic, and reporting capabilities that support tracking and analysis of Federal funds needed (Day and Week) to fund Medicaid and CHIP claim and contract payments.
BR-048	The Vendor's solution shall meet the data management, analytic, and reporting capabilities that support the payment process for all State and Federal provider expenditures (e.g. Disproportionate Share Hospitals, the Low-Income Pool, and the Graduate Medical Education Residency program).
BR-049	The Vendor's solution shall meet the data management, analytic, and reporting capabilities that support the ability to analyze and assess the service delivery system of providers and facilities (long-term care, hospitals, pharmacies, etc.) in a geographic location measured in terms of access and need.
BR-050	The Vendor's solution shall capture, categorize and report on all licensed facilities (e.g. nursing homes, assisted living, ICF-IID, lab, out-patient, pharmacy, 340B providers, etc.).
BR-051	The Vendor's solution shall identify the license and survey status for all licensed facilities (e.g. nursing homes, assisted living, ICF-IID, lab, out-patient, pharmacy, 340B providers, etc.).
BR-052	The Vendor's solution shall support investigations by providing defined algorithm and pattern recognition capability that identifies anomalous and outlier data to profile provider and recipient fraud and abuse.
BR-053	The Vendor's solution shall create machine learning based solutions for the Agency in the areas of predictive analytics, artificial intelligence, fraud detection, and fraud prevention.
BR-054	The Vendor's solution shall integrate with the Enterprise identity linking solution provided by the IS/IP Vendor Enterprise Master Person Index (MPI) and Master Organization Index (MOI). The Vendor's solution shall provide and support analysis and reporting reflecting records of organizations and persons that have the same identity.

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D. User Requirements

The EDW Vendor shall provide a solution that meets the following functional and non-functional requirements that relate to specific users or user categories.

1. Stakeholder Requirements

The EDW Vendor shall provide a solution that meets the data management, business intelligence, and analytic capabilities that support the data sharing needs of Agency Stakeholders.

Table: 4 - Stakeholder Requirements below, summarizes the Stakeholder Requirements for the EDW Solution.

Table: 4 - Stakeholder Requirements	
Req ID	Requirement
UR-001	The Vendor's solution shall facilitate the data needs (real-time, near real-time, current, and historical) for future FX modules implemented by other vendors.
UR-002	The Vendor's solution shall provide data management, business intelligence and analytic capabilities to support the data needs of the Agency with other State Agencies that support Medicaid.
UR-003	The Vendor's solution shall provide data management, business intelligence, and analytic capabilities to support the data needs of the Agency with CMS and other Federal Agencies.
UR-004	The Vendor's solution shall provide data management, business intelligence, and analytic capabilities to support the data needs of the Agency with other identified State Agencies.
UR-005	The Vendor's solution shall provide data management, business intelligence, and analytic capabilities to support the data needs of the Agency with identified organizations and partners (e.g. county organizations, non-profits, health plans, hospitals, provider and recipient organizations, academic institutions).
UR-006	The Vendor's solution shall support the data needs for third party data analytic service providers contracted with the Agency.

2. Persona Type Specific Requirements

The EDW Vendor shall provide a solution that delivers role-based personas based on the business need of individual end users. The solution will provide reporting and analytic capabilities based on the assigned user persona.

Table: 5 - Persona Type Requirements below, summarizes the Persona Requirements for the EDW Solution.

Table: 5 - Persona Type Requirements	
Req ID	Requirement
UR-007	The Vendor's solution shall provide use of one or more user specific personas based on the end user's needs.

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Table: 5 - Persona Type Requirements	
Req ID	Requirement
UR-008	The Vendor's solution shall provide the user persona for Data Viewer - Views predefined reports which are delivered to the user based on their job function.
UR-009	The Vendor's solution shall provide the user persona for Data Selector - Selects specific reports from a predefined catalog of reports. Primarily seeks discrete numbers, pieces of information, and insights pertaining to their job function.
UR-010	The Vendor's solution shall provide the user persona for Data Retriever - Starts with a predefined dashboard, typically accessing and analyzing data to produce alternate views; often goes through several iterations of selecting data facts, filtering and sub setting data before finding the insight the user needs.
UR-011	The Vendor's solution shall provide the user persona for Analyst - Begins by selecting the data the user needs, typically from a larger dataset and then enriching the data by creating calculated fields and possibly combining the data with additional datasets; often will create comparisons between data and evaluate trends across time.
UR-012	The Vendor's solution shall provide the user persona for Advanced Analyst - Creates models for the Agency using advanced analytic tools like SAS, SPSS or R. Pulls data from multiple data sources both within the Agency and outside the Agency; merges varied data sources together for analysis.
UR-013	The Vendor's solution shall provide the user persona for Data Scientist - Creates machine learning based solutions for the Agency in the areas of predictive analytics, artificial intelligence, fraud detection and fraud prevention.

E. Technology Solution Requirements

This section describes the requirements for EDW Solution components to be implemented by the EDW Vendor. Solution components are tangible software, hardware infrastructure, data, content, and products provided for use in the FX Portfolio by systems and users.

1. FX Enterprise Requirements

This section contains requirements that are applicable to all future FX solution components implemented for all FX Projects. The FX Enterprise Requirements are based on the documented technical standards for FX Projects. They include: **FX Project Management Standards; FX Technical Management Strategy; Technology Standards; Data Standards; and Enterprise Data Security Plan**, located in the [EDW Procurement Library](#). Further elaboration or exceptions specific to a solution area or specific solution component are contained in the sections that follow.

a. FX Technology Standards and Compliance

The Vendor shall adhere to the current and future Agency technology standards as documented in **Technology Standards** which is located in the [EDW Procurement Library](#). The technology standards establish and populate a framework for a common technology vocabulary and communication of relevant and applicable standards for technology components. The Technology Standards Reference Model (TSRM) is the common technology vocabulary which organizes, and groups related technology components' standardizing the names and descriptions of

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those components. The Technology Standards Reference Guide (TSRG) is a repository of technology component standards which identifies and prioritizes specific technology standards for FX Projects.

The Vendor is expected to be familiar with the Agency's Information Technology (IT) environment. All services and products provided as a result of this solicitation shall comply with all applicable Agency's IT policies, including and not limited to, compliance requirements summarized in **Table: 6 - Standards and Compliance Requirements** below. If the Vendor cannot comply with any applicable compliance requirement, they must request an exception. It will be the responsibility of the Agency to deny the exception request or to approve the compliance requirements exception.

The Vendor shall submit an annual report to the Agency that includes an evaluation of industry best practices and identification of current available innovations within the data warehouse industry. Identified innovations will include creative, cost-effective solutions that could benefit the Agency. The Vendor shall research and analyze innovations initiated by other FX-related vendors in order to articulate positive and negative impacts to the EDW. Innovations shall be implemented at the Agency's discretion. FX Vendors will be required to collaborate on any such innovations with each other, the SEAS Vendor, and the Agency for the benefit of the FX program.

Table: 6 - Standards and Compliance Requirements	
Req ID	Requirement
CR-001	The Vendor's solution shall include full integration of the MITA framework with business, architecture, and data required to support the Agency's healthcare programs.
CR-002	The Vendor shall comply with all sections of the Americans with Disabilities Act (ADA), Section 508 of the Rehabilitation Act and adhere to user interface standards.
CR-003	The Vendor shall adhere to recognized best practices during the execution of this Contract including the most recent version of the National Institute of Standards and Technology (NIST) Special Publication (SP) 800 series.
CR-004	The Vendor shall be knowledgeable of and support the Agency to maintain compliance with the "to be" vision of MITA 3.0 Standards and Conditions-MITA Condition or the latest MITA version which requires states to align to and advance in MITA maturity for business, architecture, and data.
CR-005	The Vendor's data management strategy and operational policies shall comply with Health Insurance Portability and Accountability Act (HIPAA), Health Information Technology for Economic and Clinical Health (HITECH), and American Recovery and Reinvestment Act of 2009 (ARRA) standards.
CR-006	The Vendor's solution shall be compatible with multiple standard browsers in accordance to the standards stated in the Technology Standards Reference Guide .

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Table: 6 - Standards and Compliance Requirements	
Req ID	Requirement
CR-007	The Vendor shall verify all technologies implemented are in compliance with any End User Licensing Agreements or other licensing arrangements.
CR-008	The Vendor shall comply with all sections in 42 CFR 433.112(b), and Florida Administrative Code Rules; Chapter 74-1 Information Technology Security, Chapter 74-1 Project Management and Oversight and Chapter 74-5 Identity Management.
CR-009	The Vendor shall not use any proprietary services, protocols, or file structures without the written prior approval of the Agency. The Vendor shall document and notify the Agency if a Module Vendor proposes or uses a proprietary interface and protocol.

b. Hosting and Environments

Table: 7 - Hosting and Environments Requirements below, summarizes the Hosting and Environments requirements for the EDW Project.

Table: 7 - Hosting and Environments Requirements	
Req ID	Requirement
CR-010	The Vendor shall provide hosting services which meet the Agency requirements and support the solution. The Vendor's solution shall include the ability to migrate to a cloud environment.
CR-011	The Vendor shall comply with all quality, performance standards, availability, capacity, security, and all other requirements established and defined in cooperation with the FX Project Team.
CR-012	The Vendor's hosting solution shall comply with all Federal, State, and Agency mandated Data Residency Laws and Policies.
CR-013	The Vendor shall provide a Hardware and Equipment Acquisition and Installation Plan for the proposed solution as outlined in PD-6: Bill of Materials (BOM) .
CR-014	The Vendor shall provide a Software Acquisition and Installation Plan for the proposed solution as outlined in PD-6: Bill of Materials (BOM) .
CR-015	The Vendor shall be responsible for procuring, operating, and maintaining any hardware, software or services needed to support all components and project tools used by the Vendor. Any licenses purchased by the Vendor shall be transferred, if applicable, to the Agency.
CR-016	The Vendor shall purchase and maintain infrastructure hardware and software including upgrades and technology refreshes to maintain up-to-date functionality of the solution, at no additional cost to the Agency.
CR-017	The Vendor shall, in coordination with the FX Project Team, develop and maintain a Capacity Management Plan which shall account for the reasonable growth of performance demands based on historical and projected growth rates.

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Table: 7 - Hosting and Environments Requirements	
Req ID	Requirement
CR-018	The Vendor's hosting solution shall provide the flexibility to integrate other solutions for security and regulatory purposes in the future, with built-in burst capacity to handle burst periods or potential growth.
CR-019	The Vendor shall provide the Agency with results of the Data Conversion and Migration. The results will include record counts, document counts and rejected data due to discrepancies. The Vendor shall provide reports daily or as otherwise specified by the Agency, documenting any data discrepancies and the resolution plan for each discrepancy. The Vendor shall include the requirement for the production of these reports in the Data Conversion and Migration Plan (PD-10).
CR-020	The Vendor's solution shall be available and accessible twenty-four (24) hours a day, seven (7) days a week, with the exception of planned downtime due to system upgrades or routine maintenance. All planned downtime and maintenance outages shall be coordinated and approved by the Agency at least five (5) business days in advance and occur after 10:00 PM, ET and before 6:00 AM, ET, unless a different time is approved by the Agency. Agency staff shall be notified by e-mail twelve (12) hours prior to any scheduled maintenance.
CR-021	The Vendor shall provide a solution implementing procedures, technologies, and capabilities that support non-disruptive configuration changes.
CR-022	The Vendor shall provide a set of monitoring tools for use by the Agency and Agency-designated contract staff in the support and maintenance of all testing, development and production environments.
CR-023	The Vendor shall provide a solution that provides detailed alerts and logging of all service failures and exceptions.
CR-024	The Vendor shall identify and describe the licenses necessary for the scope of work to support the solution. The solution shall provide sufficient bandwidth and redundancy to validate maximum accessibility, reliability/fault tolerance and acceptable performance.
CR-025	The Vendor shall deliver a solution with necessary and sufficient scalability to process and retain all required transactions based on project Agency volumetric data growth. Transaction being defined as the set of all operations executed within the solution.
CR-026	The Vendor shall maintain physical access credentials and controls (e.g. employee badge and security video) for all staff having access to system, data, and processing location(s). The Vendor shall designate one or more persons responsible for the security of each Vendor facility.
CR-027	The Vendor shall provide Internet security functionality at a minimum to include, the use of firewalls, intrusion detection/intrusion prevention (IDS/IPS), https, encrypted network/secure socket layer (SSL), and security provisioning protocols, such as secure sockets layer, and Internet protocol security (IPSEC) according to the applicable Federal Information Processing Standards (FIPS) and National Institute of Standards and Technology (NIST) standards.

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Table: 7 - Hosting and Environments Requirements	
Req ID	Requirement
CR-028	The Vendor's Computer Resource Center (CRC) shall be housed in a secure area, protected by a defined security perimeter, with appropriate security barriers and entry controls to regulate physical access to the CRC; record and control access by visitors, and regularly review and update access rights to the CRC.
CR-029	The Vendor shall provide to the Agency a monthly written summary of the identification, investigation, and resolution of all privacy and security incidents, and email notification within one (1) hour of discovery of any security breach. Identification, investigation, and resolution procedures shall be approved by the Agency as part of the Vendor's HIPAA compliance procedures.
CR-030	The Vendor shall protect all power and telecommunications cabling carrying information or supporting information services related to the solution from interception or damage. The Vendor shall document what existing power and cabling is covered by this standard and communicate to the Agency's management for appropriate protective action.
CR-031	The Vendor shall retain the user inquiry activity audit log data as directed by the Agency and provide the user activity audit log to authorized Agency staff within twenty-four (24) hours of receipt of request from the Agency.
CR-032	The Vendor shall provide the capability to run multiple environments simultaneously to support the testing efforts as required by the Agency. This includes providing sufficient environments and configurations (e.g. multiple environments, multiple application layers, hub architecture) necessary to perform all required functions (e.g. testing, training, production operations, modeling, business continuity, disaster recovery).
CR-033	The Vendor shall provision environments as requested by the Agency and submit an Environmental Readiness Review which details the scope of work, planned tasks, and completed tasks as part of the configure and build process for the solution including implementation of detailed requirements, detailed design, configuration, development, unit testing, and documentation.
CR-034	The Vendor shall use the PD-16: Environmental Readiness Review to evaluate and recommend to the Agency to make a Go or No-Go recommendation. The Vendor shall develop, preapproved by the Agency, standard measures and results to establish to evaluate environmental readiness.

c. Disaster Recovery and Business Continuity

Table: 8 - Disaster Recovery and Business Continuity Requirements below, summarizes the Disaster Recovery and Business Continuity requirements for the EDW Project.

The Contingency Plan for Disaster Recovery and Business Continuity has been outlined in the **FX Technical Management Strategy** and is located in the [EDW Procurement Library](#).

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Table: 8 - Disaster Recovery and Business Continuity Requirements	
Req ID	Requirement
CR-035	The Vendor shall develop, maintain, and test a Contingency Plan (for Disaster Recovery and Business Continuity) for the EDW Solution in accordance with the FX Technical Management Strategy and FX Design and Implementation Management Standards , to minimize downtime and disruption of services. Optionally, if requested by the Agency, the Vendor may be the prime, coordinating vendor for FX or Agency Disaster Recovery / Business Continuity (DR/BC) activities.
CR-036	The Vendor shall provide PD-13: Contingency Plan (for Disaster Recovery and Business Continuity) for the EDW Solution that details: <ul style="list-style-type: none"> • Roles and responsibilities; • Critical stakeholder communication; • Check point/restart capabilities; • Uninterruptible power supply; • Retention and storage of back-up files and software; • Solution for continuous vendor and Agency communications; • Recovery Time Objective (RTO); • Recovery Point Objective (RPO); • Back-up procedures, hot sites, redundancy, and support to prevent and accommodate the disruption of systems and communications. These procedures shall specify any alternate location(s) in the event critical functions are impacted; and • Annual Disaster Recovery and Business Continuity Demonstration and Annual Test of the Contingency Plan.
CR-037	As part of Contingency Plan , the Vendor shall establish, in cooperation with the Agency, a Business Impact Assessment with a hierarchy of critical services and infrastructure to determine the order that services shall be restored.
CR-038	The Agency reserves the right to direct the Vendor to amend or update its Contingency Plan in accordance with the best interests of the Agency and at no additional cost to the Agency .
CR-039	The Vendor shall modify the Contingency Plan , software installation procedures, and operational procedures as needed to reflect the changes implemented with data sources, system changes, the implementation of FX modules, or any enhancements which will impact the DR/BC capability.
CR-040	The Vendor must keep the Contingency Plan in sync with the IS/IP Vendor and new module vendors and other applicable Agency IT system's Disaster Recovery and Business Continuity Plan.
CR-041	The Vendor shall maintain the Contingency Plan in a secure, online repository, as agreed to by the Agency, and in hard copy.
CR-042	The Vendor shall limit service interruption to a period of twenty-four (24) clock hours or as stated in this Contract and shall comply with all requirements under this Contract.
CR-043	The Vendor shall, in the event of a natural or man-made disaster, protect all data/files in an off-site location. Backup, disaster recovery and facility assessment will be performed at sites specified in the Contingency Plan . The

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Table: 8 - Disaster Recovery and Business Continuity Requirements	
Req ID	Requirement
	Vendor shall provide an alternate business site if the primary business site becomes unsafe or inoperable.
CR-044	The Vendor shall provide work space for the Agency's DR/BC staff at the Vendor's DR/BC site, as needed, to support successful continuous operations when activating the Contingency Plan .
CR-045	The Vendor shall maintain all solution-related backups in a manner that shall reduce disruption of service or loss of data due to system or program failures or destruction.
CR-046	The Vendor shall support the Contingency Plan activities which provide immediate failover and create policies and procedures to implement recovery of all business services.
CR-047	The Vendor shall comply with all Performance Standards, as referenced in Attachment B, Exhibit B-1: Deliverables and Performance Standards relevant to Disaster Recovery and Business Continuity Requirements.
CR-048	In the course of replicating, storing, transmitting, maintaining and restoring any and all enterprise data and software, the Vendor shall encrypt and secure all data used for DR/BC at rest and in transit.
CR-049	The Vendor shall maintain backups of all software tools, software configurations, scripts, documentation, and logs used in the operation of the EDW Solution and the Contingency Plan .
CR-050	The Vendor shall conduct an annual test of the Contingency Plan in a parallel environment and in coordination with the IS/IP Vendor and new module vendors and other applicable Agency IT systems, which will be observed by the Agency. The Vendor shall submit a Disaster Recovery and Business Continuity Plan Execution Report that includes the outcome, corrective action plan, and revisions, if any, to the Agency. The Agency reserves the right to participate in the annual test.
CR-051	The Vendor shall comply with the same security safeguards to protect data within the EDW Solution during emergency operations as during normal business operations.

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d. Performance Standards

Table: 9 - Performance Standards below, summarizes the Performance Standards Requirements as referenced in **Attachment B - Exhibit B-1: Deliverables and Performance Standards** for the EDW Project.

Table: 9 - Performance Standards	
Req ID	Requirement
CR-052	The Vendor's EDW Solution shall meet all State and Federal regulations regarding standards for privacy, security, and individually identifiable health information including data breaches and unauthorized access. The Vendor shall implement, maintain, and operate all the solution systems in full compliance with HIPAA.
CR-053	The Vendor shall perform and complete System, Security, and Performance testing according to the PD-15: Test Plan within the timelines of the Agency approved PD-2: Project Schedule .
CR-054	The Vendor shall maintain the agreed upon staffing levels to properly complete and support the services specified in this Contract.
CR-055	The EDW Solution provided by the Vendor shall be available 99.982% of the time for every component of the solution, twenty-four (24) hours a day, seven (7) days a week, excluding Agency approved planned downtime in alignment with Tier III Data Center Standards.
CR-056	The Vendor's Data Replication solution as described in Table: 14 shall replicate all required data from source to target with one-hundred percent (100%) accuracy.
CR-057	The Vendor's Data Replication solution shall replicate all required data from source to target with each transaction being completed within sixty (60) seconds of the origination of the source transaction.
CR-058	The Vendor's EDW Reporting Data Store solution shall provide: real time source data availability within five (5) minutes; committed delayed source data is available in the target system in within fifteen (15) minutes; committed daily source data is available in the target system within four (4) hours; committed Weekly, Monthly, Quarterly, Annual and Odd Cycle source data shall be available in the target system within twenty-four (24) hours.
CR-059	The Vendor shall provide an EDW Solution that maintains a level of data currency in Analytic Data Store where committed source data is available based on intervals to be specified by the Agency; daily source data is available in the target system within four (4) hours; Weekly, Monthly, Quarterly, Annual and Odd Cycle source data shall be available in the target system within twenty-four (24) hours.
CR-060	The Vendor shall provide an EDW Solution that will respond to simple data service requests in less than 125 ms (milliseconds), data service requests of medium complexity in less than 140 ms and complex data service requests in less than 170 ms. Note: <i>Simple Data Service tied to three (3) or fewer business rules and three (3) or fewer external calls.</i> <i>Medium Data Service tied to four (4) to six (6) business rules and four (4) to six (6) external calls.</i>

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Table: 9 - Performance Standards	
Req ID	Requirement
	<i>Complex Data Service tied to more than six (6) business rules and more than six (6) external calls.</i>
CR-061	<p>The Vendor shall provide a solution that will respond to simple direct access queries in less than 25 ms, direct access queries of medium complexity in less than 40 ms and complex direct access queries in less than 70 ms.</p> <p>Note: <i>Simple Data Access Queries tied to one Entity with ten (10) or fewer attributes and one (1) or fewer relationships.</i> <i>Medium Data Access Queries tied to two (2) to three (3) Entities, with eleven (11) to twenty (20) attributes and two (2) to three (3) relationships.</i> <i>Complex Data Access Queries tied to more than three (3) Entities, with more than twenty (20) attributes and more than three (3) relationships.</i></p>
CR-062	<p>The Vendor shall implement an EDW Solution with response times to simple reports within one (1) second or less, reports of medium complexity within two (2) seconds or less, and complex reports within <i>three (3) seconds or less.</i></p> <p>Note: <i>Simple reports sourced from three (3) or fewer tables, ten (10) or fewer parameters and one (1) data source</i> <i>Medium reports sourced from three (3) to eight (8) tables, ten (10) to fifteen (15) parameters and one (1) to two (2) data sources</i> <i>Complex reports sourced from more than eight (8) tables, more than fifteen (15) parameters and more than two (2) data sources</i></p>
CR-063	<p>The Vendor shall implement requested Specialized Data Stores (SDS) based on the following criteria:</p> <ul style="list-style-type: none"> • Simple SDS Structures shall be implemented within <i>three (3) business days</i> of approval to begin construction. • SDS Structures of Medium complexity shall be implemented within <i>ten (10) business days</i> of approval to begin construction. • Complex SDS structures shall be implemented within <i>thirty (30) calendar days</i> of approval to begin construction. <p>Note: <i>Simple SDS tied to three (3) or fewer data types and one (1) data source</i> <i>Medium SDS tied to three (3) to five (5) data types and one (1) to two (2) data sources</i> <i>Complex SDS tied to more than five (5) data types and more than two (2) data sources</i></p>
CR-064	The Vendor shall provide a solution that will extract, at a minimum, one (1) million rows of data per minute.
CR-065	The Recovery Point Objective (RPO) for the solution shall be no more than fifteen (15) minutes.
CR-066	The Recovery Time Objective (RTO) for the solution shall be no more than twenty-four (24) hours.
CR-067	Upon Agency request, the Vendor shall restore archived data within twenty-four (24) hours of the request.

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e. Security Requirements

Table: 10 - Security Requirements below, summarizes the Security requirements for the EDW Project. FX Security Standards are detailed in Technology Standards and Enterprise Data Security Plan, located in the [EDW Procurement Library](#).

Table: 10 - Security Requirements	
Req ID	Requirement
CR-068	The Vendor shall encrypt all data received, stored, processed, and transmitted by the solution either physically or electronically as required by Federal, State, and Agency regulations, and Industry Standard encryption requirements.
CR-069	The Vendor shall protect all data from loss or unauthorized use or disclosure.
CR-070	The Vendor shall provide detailed security audit trail reporting (e.g. security, level, locale, user ID, before and after changes) for all transactions that use the solution.
CR-071	The Vendor shall provide tools (e.g. alerts, reports), which detect and report data usage anomalies and users who may have misused the system. These alerts and reports shall be delivered to the Agency daily.
CR-072	The Vendor shall provide secure access to its off-site facilities; including storage facilities. The Agency may perform and review physical security audits every one hundred eighty (180) calendar days of the Vendor's off-site and on-site facilities at the Agency's discretion. All Vendor facilities related to the FX enterprise transformation shall meet all State and Federal guidelines.
CR-073	The Vendor shall maintain policies and procedures for providing security clearance, managing staffing controls, allowing access to confidential information, and allowing access to restricted areas within the Vendor's solution as part of the System Security Plan.
CR-074	The Vendor shall respond to risks identified through the periodic security risk assessments with a CMS Information Security Program Plan of Action and Milestones (POA&M) containing clarifying information, a proposed mitigation strategy if necessary, a timeline for implementation, and shall work with the Agency to successfully execute the POA&Ms. The risk assessment report shall be provided to the Agency within ten (10) business days of the event as part of System Security Plan.
CR-075	The Vendor shall continually monitor system activity for intrusion, hacking, unusual activity, and other compromises to the solution. The Vendor shall immediately report any incidents of such, to the Agency. Only Agency authorized Vendor personnel may override system security alerts and edits.
CR-076	The Vendor shall provide a solution which immediately suspends and reports access to users for conditions which violate security rules, represent unauthorized attempts to access data or system functions, and system activity that violates security parameters.

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Table: 10 - Security Requirements	
Req ID	Requirement
CR-077	The Vendor's solution code shall never run from a system level account with unlimited privileges such as "root" or "administrator."
CR-078	The Vendor's solution shall meet the minimum password format and management policy as required by the Agency.
CR-079	The Vendor shall perform a monthly review of solution hardware, software, and licenses, and shall present recommendations to the Agency for review and removal of any unneeded hardware, software, and licenses eligible to be decommissioned upon approval from the Agency.
CR-080	The Vendor shall enforce session timeouts after fifteen (15) minutes of inactivity. Long running user-defined queries and batch process are excluded from this requirement.
CR-081	The Vendor shall provide a solution that supports Multi-Factor Authentication with both user id and password verification and an additional level verification. The Vendor shall collaborate with IS/IP vendor to integrate with the Single Sign-on capability for Authentication, Authorization, and Audit.
CR-082	The solution shall integrate with the IS/IP Single Sign-on solution to provide Role-Based Security to the EDW Solution.
CR-083	The Vendor shall provide a solution that protects data through encryption, masking, de-identification, and other techniques where appropriate, and comply with Florida Administrative Code Rule 74-2 Information Technology Security.
CR-084	The Vendor shall manage System User Authorization and System User Access Control for their staff.

2. Technology Solution Component Specific Requirements

This section describes solution capabilities and specific requirements for components of the EDW Solution.

a. Operational Data Store (ODS)

Table: 11 - Operational Data Store and Content Management Requirements below, summarizes the Operational Data Store (ODS) requirements for the EDW Project.

Table: 11 - Operational Data Store and Content Management Requirements	
Req ID	Requirement
CR-085	The Vendor shall design, develop, and implement an Operational Data Store (ODS) solution that shall function as the single source of truth for all healthcare related data retained and utilized for FX enterprise transformation, support all FX Project transaction processing, and support healthcare Providers, healthcare Recipients and any other entity or organization seeking Agency healthcare data, and provide for all Agency Content Management (CM).

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Table: 11 - Operational Data Store and Content Management Requirements	
Req ID	Requirement
CR-086	The Vendor shall gather, document, confirm an understanding of and respond to all business and technical requirements pertaining to the design, development and implementation of the Operational Data Store (ODS) and the Content Management (CM) solutions.
CR-087	The Vendor shall schedule, document, and direct all Joint Application and Design (JAD) sessions for gathering and developing detailed ODS requirements from the Agency.
CR-088	The Vendor, in coordination with the SEAS and IS/IP Vendors, shall implement processes to maintain, access, retain, archive, and otherwise protect from theft, breach, and destruction all ODS data, data structures, metadata, data dictionaries, and other supporting ODS-related information.
CR-089	The Vendor shall deliver a solution which provides data integration, supports industry-standard Data Management methodologies, ETL services, Analytic Data Store technologies, Data Marts, Specialized Data Stores, and Content Management.
CR-090	The Vendor shall design, document, develop implement, maintain and update Logical and Physical Data Models pertaining to the solution.
CR-091	The Vendor shall provide an Entity Relationship Diagrams (ERD) elucidating the design and structure of the solution.
CR-092	The Vendor shall participate in the design sessions for the Integration Services and the various FX modules, as specified by the Agency.
CR-093	The Vendor shall provide a Content Management solution which supports all industry standard content type definitions.
CR-094	The Vendor shall provide a Content Management solution which supports receiving, storing, and utilization of data, data structures, files, images, documents, emails, faxes, Optical Character Recognition (OCR) data, blueprints, and any other digital content necessary to Agency and Enterprise activities.
CR-095	The Vendor shall provide a Content Management solution which provides basic capabilities such as storing, indexing, versioning, rollback, access control, publishing, and reporting.
CR-096	The Vendor shall provide a Content Management solution which has the capability to be enhanced through Agency approved add-ons, plug-ins, APIs or other similar features.
CR-097	The Vendor shall provide a Content Management solution capable of scaling in capacity and performance to meet increased resource demands without interruption or impact to availability and user experience.
CR-098	All ODS ERDs shall be the property of the Agency. The Vendor shall provide to the Agency any ODS ERD upon request and within seventy-two (72) hours.
CR-099	The Vendor shall maintain all ODS ERDs and related documentation in a manner that accurately reflects the current ODS architecture.

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b. Component Specific Solution Requirements

Table: 12 - Component Specific Solution Requirements below, summarizes the Component Specific solution requirements for the EDW Project.

Table: 12 - Component Specific Solution Requirements	
Req ID	Requirement
CR-100	The Vendor's solution shall support and promote an enterprise view, utilizing technologies which align with CMS Standards and Conditions, Agency goals, MITA Maturity Strategy, and nationally recognized business processes and technologies.
CR-101	The Vendor shall demonstrate conformity to industry standards and best practices during all phases of the design, development, and implementation of the solution.
CR-102	The Vendor shall provide and implement an Operational Data Store which incorporates current industry standard tools and technologies where the ongoing support and maintenance skill sets are readily available in the industry.
CR-103	The Vendor's solution shall support a fully scalable architecture designed to allow incremental increases in every capacity to meet expansion in usage demand.
CR-104	The Vendor shall be compliant with the Technical Standards Reference Guide (TSRG), located in the EDW Procurement Library .
CR-105	The Vendor shall be responsible for procuring, installing, operating and maintaining any software needed to support design, development, implementation and ongoing maintenance of the solution.
CR-106	The Vendor shall provide a solution that supports detailed, standardized logging, messaging, and reporting of errors and exceptions.
CR-107	The Vendor in coordination with the IS/IP Vendor shall secure information in transit required by Federal, State and send/receive business partner's regulations, policies or best practices.

c. Data Conversion and Migration

Table: 13 - Data Conversion and Migration Requirements below, summarizes the Data Conversion requirements.

Table: 13 - Data Conversion and Migration Requirements	
Req ID	Requirement
CR-108	The Vendor shall coordinate with the Agency, SEAS, and existing Vendors in development of a Data Conversion and Migration Plan (PD-10) which optimizes the loading process while minimizing the system impact to the users.

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Table: 13 - Data Conversion and Migration Requirements	
Req ID	Requirement
CR-109	The Vendor shall implement a Data Conversion and Migration solution which provides the capability of resolving semantic and context conflicts across numerous data sources in a consistent and reliable manner; ensuring both the accuracy and integrity of the data.
CR-110	The Vendor shall identify and document the existing Agency data, data structures, and content the Vendor is responsible for, and shall provide a crosswalk for the identified data, data structures, and content to corresponding elements in the Vendor solution.
CR-111	The Vendor shall provide a Data Conversion and Migration solution that supports connectivity with, loading to, and extracting from Industry Standard Relational Database Management System (RDBMS).
CR-112	The Vendor shall provide a Data Conversion and Migration solution that supports loading to and extracting from NoSQL structures.
CR-113	The Vendor shall provide a Data Conversion and Migration solution that supports Heterogeneous Infrastructures.
CR-114	The Vendor shall provide a Data Conversion and Migration solution that supports Data Transformation and mapping functionality.
CR-115	The Vendor shall provide a Data Conversion and Migration solution that supports Heterogeneous Data Type mapping.
CR-116	The Vendor shall provide a Data Conversion and Migration tool that uses a GUI-based or Web-based design, development and management environment.
CR-117	The Vendor shall provide a Data Conversion and Migration tool that supports loading to and extracting from Flat File repositories.
CR-118	The Vendor shall provide a Data Conversion and Migration solution that supports Cloud-based Migration.
CR-119	The Vendor shall provide the Agency with results of the Data Conversion and Migration. The results will include record counts, document counts and rejected data due to discrepancies. The Vendor shall provide summary reports documenting any data discrepancies and the resolution plan for each.

d. Data Replication

Data Replication is the process to synchronize information from an existing operational system to and from the Operational Data Store.

Table: 14 - Data Replication Requirements below, summarizes the Data Replication requirements for the EDW Project.

Table: 14 - Data Replication Requirements	
Req ID	Requirement
CR-120	The Vendor shall procure, install, operate, and maintain a Data Replication Tool that will perform all Data Replication activities within the solution.

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Table: 14 - Data Replication Requirements	
Req ID	Requirement
CR-121	The Vendor shall design, develop and operate Data Replication process to sync data in real-time between the FMMIS and the ODS databases. If applicable, the replication process should support other systems to sync data in real-time with ODS database.
CR-122	The Vendor shall provide a Data Replication tool that performs loading to and extracting from all major, industry-standard RDBMS structures.
CR-123	The Vendor shall provide a Data Replication tool that performs loading to and extracting from NoSQL structures.
CR-124	The Vendor shall provide a Data Replication tool that performs 1-1, 1-N, N-1, N-N database replication.
CR-125	The Vendor shall provide a Data Replication tool that performs Networked database replication.
CR-126	The Vendor shall provide a Data Replication tool that provides Heterogeneous Infrastructure support.
CR-127	The Vendor shall provide a Data Replication tool that supports Cloud-based replication.
CR-128	The Vendor shall provide a Data Replication tool that performs real-time replication.
CR-129	The Vendor shall provide a Data Replication tool that performs bi-directional replication.
CR-130	The Vendor shall provide a Data Replication tool that performs Data Transformation and mapping functionality.
CR-131	The Vendor shall provide a Data Replication tool that performs content-based filtering.
CR-132	The Vendor shall provide a Data Replication tool that performs Heterogeneous Data Type mapping.
CR-133	The Vendor shall provide a Data Replication tool that performs partial table replication.
CR-134	The Vendor shall provide a Data Replication tool that maintains transactional integrity during transit from source to target.
CR-135	The Vendor shall provide a Data Replication tool that performs the automatic capture of Metadata changes.
CR-136	The Vendor shall provide Data Replication tools which performs GUI-based design, development, and management environments.
CR-137	The Vendor shall provide a Data Replication tool that performs N-Directional Replication Load Balancing.
CR-138	The Vendor shall provide a Data Replication tool that performs loading to and extracting from Flat File repositories.

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e. Integration and Data Services

Integration and data services refers to enabling access and use of enterprise data through the use of the Enterprise Integration Services / Integration Platform (IS/IP) and data services. **Table: 15 - Integration and Data Services Requirements** below, summarizes the Integration and Data Services requirements for the EDW Project.

Table: 15 - Integration and Data Services Requirements	
Req ID	Requirement
CR-139	The Vendor shall design, develop, implement, support and maintain data services to decouple data from modules and applications and maintain separation of concerns.
CR-140	The Vendor shall coordinate with the FX Project Team and the IS/IP Vendor to design, develop, implement and operate a data services integration strategy, providing access to all solution data in accordance with the FX Technical Architecture.
CR-141	The Vendor, in cooperation with the SEAS and IS/IP vendor, shall enforce implementation of components based on a Service Oriented Architecture (SOA) which support reuse of the services and component functionality.
CR-142	The Vendor shall provide transaction recovery after any level of failure, including the ability to successfully roll back transactions, regardless of size or distribution across the system.
CR-143	The Vendor shall provide a solution that supports and maintains the Data Management Governance, Data Security, and Data Quality of all data received by the solution and that maintains data integrity throughout all Replication and ETL (Extract-Transform-Load) processes.
CR-144	The Vendor shall provide a solution that fully integrates with the Enterprise Scheduling software solution provided by the Agency or Agency designated Vendor. If requested by the Agency, the Vendor shall implement and support the Enterprise Scheduling software solution. Please note that the Agency currently uses Windows Task Manager, Cron, SQL Agent, and Autosys for various scheduling needs.
CR-145	The Vendor shall document all services within the solution in the Interface Control Document (ICD) which shall include data layout documentation, data mapping crosswalk, inbound/outbound capability, and information on producer and consumer of the service for all services.
CR-146	The Vendor shall provide and document architecture specifications as part of the System Design Document deliverable which clearly defines how the data services are provisioned and integrated with IS/IP integration service endpoints. All service endpoints/APIs shall be exposed to the ESB and are able to receive and submit messages through the ESB.
CR-147	The Vendor shall provide a solution that provides storing, and utilization of data, data structures, files, images, documents, emails, faxes, OCR data, blueprints, and any other digital content necessary to Agency and Enterprise activities.

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Table: 15 - Integration and Data Services Requirements	
Req ID	Requirement
CR-148	The Vendor shall be responsible to collect information for all submitted transactions, including: submitted timestamp, transaction size, user, IP address, and port. The Vendor shall retain this information and provide access for problem resolution, reporting Performance Standards, and other business needs.
CR-149	The Vendor shall integrate with the IS/IP Managed File Transfer (MFT) solution to process both inbound and outbound files securely and at the frequency defined in the Interface Control Document.
CR-150	The Vendor's solution shall provide versioning of services and messages and the proper retirement of outdated services.
CR-151	The Vendor's solution shall support the exchange of data or files via web-services, queues, or other common message brokering protocols.
CR-152	The Vendor shall perform incremental development of data services as driven by business requirements, and implementation roll outs approved by the Agency, not as governed by available technology.
CR-153	The Vendor's solution shall implement functionality to support the exchange of information for multiple entities outside the Agency's Enterprise systems.

f. Enterprise Analytic Data Store

Table: 16 - Enterprise Analytic Data Store Requirements below, summarizes the Enterprise Analytic Data Store requirements for the EDW Project.

Table: 16 - Enterprise Analytic Data Store Requirements	
Req ID	Requirement
CR-154	The Vendor shall design, develop, implement, maintain and operate an Enterprise Analytic Data Store Solution to function as the central data repository for decision making, business intelligence, data analytics, operational reporting, dashboards, and fraud and abuse detection, and that will operate in a near real-time capacity to meet the business, management, and analytical needs of the Agency.
CR-155	In the process of designing, developing and implementing the solution, the Vendor shall maintain a holistic view that supports both industry standards and emerging technologies in relation to Legislative mandates, Agency directives, and CMS approved Medicaid business processes and standards.
CR-156	The Vendor shall demonstrate conformity to industry standards and best practices during all phases of Enterprise Analytic Data Store design, development, and implementation.
CR-157	The Vendor shall provide and implement a solution which incorporates industry standard methodologies, technologies, and tools where the ongoing support and maintenance skill sets are readily available in the industry.

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Table: 16 - Enterprise Analytic Data Store Requirements	
Req ID	Requirement
CR-158	The solution shall support a scalable architecture designed to allow incremental increases in every capacity to meet expansion in usage demand.
CR-159	The solution shall support and promote an enterprise view, utilizing technologies which align with Agency goals, MITA Maturity Strategy and nationally recognized business processes and technologies.
CR-160	The Vendor shall be compliant with all aspects of the agreed-to Project Process Agreement (PPA). Further, the Vendor shall update the System Design Document based on Industry Standard System Life Cycle Management practices as defined within the Project Process Agreement (PPA). The PPA will be finalized after Contract execution.
CR-161	The Vendor shall be compliant with the Technical Standards Reference Guide (TSRG) as put forth by the FX Project Team.
CR-162	The Vendor shall gather, document, confirm an understanding of and respond to the business and technical requirements pertaining to the design, development, implementation, maintenance and operation of the Enterprise Data Warehouse solution.
CR-163	The Vendor shall design, develop and implement a Reporting Data Store (RDS) and Analytic Data Store (ADS) that contains the data from the Operational Data Store (ODS) Solution, and that is optimized to provide operational reporting, dashboards, and ad hoc queries in real-time or near real-time.
CR-164	The Vendor shall design, develop, and implement an Enterprise Analytic Data Store that contains information from the RDS and ADS that is optimized to provide analytics, reporting, dashboards, and ad hoc queries.
CR-165	The Vendor shall design, develop and implement a set of Data Marts, which are optimized to provide business unit-specific and personae-based analytics, reporting, dashboards, and ad hoc queries.
CR-166	The Vendor shall confirm and document understanding that each individual Data Mart shall be a separate and distinct implementation, each complying with all Data Mart related requirements and with the EDW Solution requirements.
CR-167	The Vendor shall, in coordination with the FX Project Team, design, document, develop, implement, maintain, operate, and update annually all Logical and Physical Data Models pertaining to the EDW Vendor solution.
CR-168	The Vendor shall provide an Entity Relationship Diagrams (ERD) elucidating the design and structure of the solution. All ERDs shall be the property of the Agency, shall be maintained and updated, at a minimum, annually, and must be provided to the Agency upon request and within seventy-two (72) hours.
CR-169	The Vendor shall be responsible for procuring, operating, and maintaining any software needed to support the design, development, and implementation of the EDW Vendor.
CR-170	The Vendor shall comply with all quality, performance standards, availability, capacity, security, and all other requirements established and defined in cooperation with the FX Project Team.

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Table: 16 - Enterprise Analytic Data Store Requirements	
Req ID	Requirement
CR-171	The Vendor shall provide a solution that will initially hold seven (7) years of converted data and support seven (7) years of rolling history in the Enterprise Analytic Data Stores. Data Marts and specialized Data Stores shall have retention periods defined on a case-by-case basis.
CR-172	The Vendor shall provide an RDS and ADS solution that retains all data related to Life Time transactions, data required in relation to legal matters, law suits, and other data as requested by the Agency in a non-Archived state until such time as the Agency gives approval to archive or purge the specified data.
CR-173	The Vendor shall provide a plan for a Data Governance and Enterprise Analytic Data Stores that can collect, consolidate and organize data from multiple Data Sources for reporting and analytics.
CR-174	The Vendor shall schedule, document, and direct all Joint Application and Design (JAD) sessions for gathering and developing detailed Enterprise Analytic Data Store requirements from the Agency.
CR-175	The Vendor shall schedule, document and direct separate Joint Application and Design (JAD) sessions for gathering and developing detailed requirements related to individual Data Marts from the various business units with the Agency.

g. Persona Optimized Analytics & Reporting (POAR)

The EDW Vendor shall provide an EDW Solution that supports role-based personas based on the business need of individual end users. The solution will provide reporting and analytic capabilities based on the assigned user persona.

Table: 17 - Persona Optimized Analytics & Reporting (POAR) Requirements below, summarizes the Persona Optimized Analytics & Reporting (POAR) requirements for the EDW Project.

Table: 17 - Persona Optimized Analytics & Reporting (POAR) Requirements	
Req ID	Requirement
CR-176	The Vendor shall design, develop, implement, maintain, operate and update a Persona Optimized Analytics and Reporting (POAR) solution to function as the standard set of tools for Federal and State reporting, operational reporting, data analytics, financial reporting and analytics, dashboards, and ad hoc reporting for the Agency.
CR-177	The Vendor shall provide and implement a POAR Solution which incorporates industry standard methodologies, technologies and tools where the ongoing support and maintenance skill sets are readily available in the industry.
CR-178	The POAR solution shall support a fully scalable architecture designed to allow incremental increases in every capacity to meet expansion in usage demand.

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Table: 17 - Persona Optimized Analytics & Reporting (POAR) Requirements	
Req ID	Requirement
CR-179	The POAR solution shall support and promote an enterprise view, utilizing technologies which align with Agency goals, MITA Maturity Strategy, and nationally recognized business processes and technologies.
CR-180	The Vendor shall provide and implement a POAR Solution which incorporates industry standard methodologies, technologies, and tools able to support the migration of legacy reports to reports developed within the Vendor solution.
CR-181	The Vendor shall be compliant with the agreed-to Project Process Agreement (PPA). Further, the Vendor shall update to the Agency a System Design Document based on Industry Standard System Life Cycle Management practices as defined within the Project Process Agreement (PPA). The PPA will be finalized after Contract execution.
CR-182	The Vendor shall be compliant with the Technical Standards Reference Guide (TSRG), located in the EDW Procurement Library .
CR-183	The Vendor shall gather, document, confirm an understanding of and respond to all business and technical requirements pertaining to the design, development, implementation, maintenance and operation of the solution.
CR-184	The Vendor shall schedule, document, and direct all Joint Application and Design (JAD) sessions for gathering and developing detailed POAR requirements from the Agency.
CR-185	The Vendor shall conduct separate JAD sessions with each business unit within the Agency to gather detailed reporting and analytic requirements (e.g. report types, dashboards, personae, parameterized reports, automated reporting needs, training needs, other specialized reporting considerations).
CR-186	The Vendor shall design, develop, implement, maintain and operate a solution that, through the use of Prescriptive Analytical capabilities, provides recommendations for Business Rules and "Next Steps" to the Agency.
CR-187	The Vendor shall design, develop, implement, maintain and operate a solution that, through the use of Predictive Analytical capabilities, provides healthcare related forecasting based on scenario-driven analysis to the Agency.
CR-188	The Vendor shall design, develop and implement a solution that, through the use of healthcare Diagnostic Analytics, provides assessments of health events in an attempt to determine "what happened and why."
CR-189	The Vendor shall design, develop, implement, maintain and operate a solution that, through the use of Descriptive Analytical capabilities, provides dashboards and other "At A Glance" views derived from real-time data flowing through the Enterprise.
CR-190	The Vendor shall be responsible for procuring, installing, operating, and maintaining any software needed to support the design, development, and implementation of the POAR.
CR-191	Upon request from the Agency, the Vendor shall leverage any existing tools used by the Agency. Upon request from the Agency, the Vendor shall be responsible for managing and provisioning the existing tools used by the Agency.

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Table: 17 - Persona Optimized Analytics & Reporting (POAR) Requirements	
Req ID	Requirement
CR-192	The Vendor shall store the solution documentation pertaining to the design, development, implementation, operations, and maintenance of all reports, dashboards and other analytic products on a specific server, SharePoint site or similar document repository as specified by the FX Project Team.
CR-193	The Vendor shall comply with the quality, performance standards, availability, capacity, security, and all other requirements established and defined in cooperation with the FX Project Team.
CR-194	The Vendor shall provide a solution that can perform analytics using data imported from Access, ASCII, dBase, Excel, CSV, HTML, XML, JMP, ODBC, R, SAS, SAP BO, SPSS files, and other industry standard file formats and use the imported data for queries and reporting.
CR-195	The Vendor shall provide a solution that can export query results into Access, ASCII, dBase, Excel, CSV, HTML, XML, JMP, ODBC, R, SAS, SPSS and other industry standard file formats.
CR-196	The Vendor shall implement a solution that has parameterized reporting capabilities.
CR-197	The Vendor shall implement a solution with roll up, drill down, slice and dice, and pivot table capabilities.
CR-198	The Vendor shall implement a solution that can query using both single character and string wild card searches against the available data elements.
CR-199	The Vendor shall implement a solution that has a scheduling tool for reporting and analytic tasks.
CR-200	The Vendor shall implement a solution that can use data from sources external to the RDS and ADS as querying parameters.
CR-201	The Vendor shall implement a solution that can print reports and maps from within the solution.
CR-202	The Vendor shall implement a solution that can query against Data Dictionary and Metadata tools.
CR-203	The Vendor shall implement a solution that can produce dashboards containing charts, graphs, summarized data, and maps.
CR-204	The Vendor shall implement a solution that can create and view dashboards, reports and maps for mobile devices such as Android, iOS, and Windows.
CR-205	The Vendor shall implement a solution that can produce scheduled canned reports, on-demand canned reports, and on-demand ad-hoc reports.
CR-206	The Vendor shall provide a solution that can query both structured and unstructured data.
CR-207	The Vendor's solution shall be able to mask any sensitive data displayed on reports, dashboards, and maps.
CR-208	The Vendor shall procure, operate, and maintain tools that supports Free Hand SQL.

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Table: 17 - Persona Optimized Analytics & Reporting (POAR) Requirements	
Req ID	Requirement
CR-209	The Vendor shall develop and maintain a Report Registry that stores information for all reports maintained by and within the solution. The Registry shall at a minimum retain the report name, a detailed description of the report, report creation date, last execution date, most recent users, and frequent users. The registry shall provide the capability to search, view and print reports through a Browser-based User Interface.

h. Specialized Data Stores (SDS)

Table: 18 - Specialized Data Stores (SDS) Requirements below, summarizes the Specialized Data Store (SDS) requirements for the EDW Project.

Table: 18 - Specialized Data Stores (SDS) Requirements	
Req ID	Requirement
CR-210	The Vendor shall design, develop, implement, operate, and maintain a Specialized Data Store solution to function as a repository for specialized, and ad hoc data structures intended for targeted decision making, data analytics, dashboards, audit requests, large volume data extracts, and as a source of research, survey, and analytic data for entities external to the Agency.
CR-211	In the process of designing, developing, implementing, operating, and maintaining the SDS Solution, the Vendor shall maintain a holistic view that supports both industry standards and emerging technologies in relation to Legislative mandates, Agency directives, and CMS approved Medicaid business processes and standards.
CR-212	The Vendor shall demonstrate conformity to industry standards and best practices during all phases of SDS design, development, implementation, operation and maintenance.
CR-213	The Vendor shall provide and implement an SDS solution which incorporates industry standard methodologies, technologies, and tools where the ongoing support and maintenance skill sets are readily available in the industry.
CR-214	The SDS Solution shall provide a fully scalable architecture designed to allow incremental increases in every capacity to meet expansion in usage demand while adhere to accepted performance standards as referenced in Attachment B, Exhibit B-1: Deliverables and Performance Standards .
CR-215	The SDS Solution shall provide and promote an enterprise view, utilizing technologies which align with Agency goals, MITA Maturity Strategy and nationally recognized business processes and technologies.
CR-216	The Vendor shall be compliant with the aspects of the agreed-to Project Process Agreement (PPA). Further, the Vendor shall update the System Design Document based on Industry Standard System Life Cycle Management practices as defined within the Project Process Agreement (PPA). The PPA will be finalized after Contract execution.

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Table: 18 - Specialized Data Stores (SDS) Requirements	
Req ID	Requirement
CR-217	The Vendor shall be compliant with the Technical Standards Reference Guide (TSRG), located in the EDW Procurement Library .
CR-218	The Vendor shall design, develop, implement, operate, and maintain the SDS throughout this Contract based on Agency needs, Legislative mandates, and other Agency defined modifications.
CR-219	The Vendor shall gather, document, confirm an understanding of and respond to all business and technical requirements pertaining to the design, development, implementation, operation and maintenance of the Enterprise Data Warehouse solution.
CR-220	The Vendor shall schedule, document and direct the Joint Application and Design (JAD) sessions for gathering and developing detailed SDS requirements from the Agency.
CR-221	The Vendor shall confirm and elaborate the business and technical requirements pertaining to the design, development, implementation, operation and maintenance of the SDS Solution.
CR-222	The Vendor shall design, develop, and implement SDS data structure, and shall retain the data structures for a time period specified by the Agency. The Vendor shall maintain backups of all SDS Data structures for a time period to be specified by the Agency.
CR-223	The Vendor shall store the documentation pertaining to the design, development, implementation, operations, and maintenance of all reports, dashboards, and other analytic products on a specific server, SharePoint site or similar document repository as specified by the FX Project Team.
CR-224	The Vendor shall comply with all quality, performance standards, availability, capacity, security, and all other requirements established and defined in cooperation with the FX Project Team.
CR-225	The Vendor shall be responsible for procuring, operating, and maintaining any software needed to support design, development, and implementation of the SDS Solution.
CR-226	The Vendor shall provide a solution that can query both structured and unstructured data that can be used to build structured and unstructured Specialized Data Stores.

i. Solution Component Specific Requirements

1) Data Dictionary

Table: 19 - Data Dictionary Tool Requirements below, summarizes the Data Dictionary requirements for the EDW Project.

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Table: 19 - Data Dictionary Tool Requirements	
Req ID	Requirement
CR-227	The Vendor shall design, develop, implement, maintain and update an enterprise Data Dictionary encompassing the business processes, practices and policies of the Agency and which incorporates current industry standard tools and technologies.
CR-228	The Vendor shall procure, install, operate, and maintain an Enterprise Data Dictionary Tool that supports all Data Dictionary related activities within the solution.
CR-229	The Vendor shall provide a Data Dictionary tool that supports custom Data Dictionary fields for items such as Data Ownership, Data Stewardship, and Data Sensitivity.
CR-230	The Vendor shall provide a Data Dictionary tool that supports design, development, and implementation of a Data Dictionary on all industry standard RDBMS platforms, and that also supports NoSQL databases.
CR-231	The Vendor shall develop a Data Dictionary using industry standard practices identified and cited by the Vendor and approved by the Agency. At a minimum, the Data Dictionary shall contain for each field: Human readable/"plain English" field name; A field description; Database field name; Database table name; Field data type; Field length; any valid values associated with the field; and a Description of each valid value. The Data Dictionary must be published online in a readable, searchable format available for all end users.
CR-232	The Vendor shall provide a Data Dictionary tool that supports global Data Dictionary search and query functionality.
CR-233	The Vendor shall provide a Data Dictionary tool that supports a single Global Data Dictionary across multiple databases in a heterogeneous database environment.
CR-234	The Vendor shall provide a Data Dictionary tool that provides support for documenting Cross-Database table relationships.
CR-235	The Vendor shall provide a Data Dictionary tool that supports exporting all or customized, user-defined portions of the Data Dictionary to HTML, PDF, and other industry-standard formats.
CR-236	The Vendor shall provide a Data Dictionary tool that shall support industry standard data modeling and Entity Relationship notation (e.g. UML, ERD, IDEFX1, IE).

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2) Metadata Management Tool and Repository

Table: 20 - Metadata Management Tool and Repository Requirements below, summarizes the Metadata Management Tool and Repository requirements for the EDW Project.

Table: 20 - Metadata Management Tool and Repository Requirements	
Req ID	Requirement
CR-237	The Vendor shall design, develop, implement, maintain, and operate a repository that contains all Agency Metadata, specifically: Business Metadata which provides the context and standard definitions of business terms related to enterprise data; Technical Metadata which is used for development and maintenance of the solution; Data Quality Metadata which advises users about the currency (freshness), accuracy, validity and completeness of the enterprise data; Operational Metadata which is used to control, monitor and describe the behavior of solution processes; Security Metadata identifies the information on security requirements; and end user Metadata which can help to understand and influence user attitudes towards and use of the solution.
CR-238	The Vendor shall provide a Metadata Management Tool that supports Impact Analysis capabilities, Data Lineage capabilities, and a searchable Metadata Catalog for all data objects within the solution.
CR-239	The Vendor shall provide a Metadata Management Tool that supports Enterprise-wide Impact Analysis capabilities, including the ability to view all upstream and downstream objects impacted by a proposed change to any data object within the solution.
CR-240	The Vendor shall provide a Metadata Management Tool that supports end-to-end Data Lineage capabilities, providing a continuous view of the flow of data through the solution.
CR-241	The Vendor shall provide a Metadata Management Tool that supports a fully searchable Metadata Catalog and that supports the linkage of data objects to business descriptions, business rules, and other supporting documentation.
CR-242	The Vendor shall provide a Metadata Management Tool that supports the ability to capture Metadata from a broad range of sources such as data models, business intelligence tools, ETL/Replication tools, flat files and relational data structures and NoSQL data sources.

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3) Extract Transform Load (ETL) Management

Table: 21 - ETL Management below, summarizes the ETL Management requirements for the EDW Project.

Table: 21 - ETL Management	
Req ID	Requirement
CR-243	The Vendor shall design, develop, maintain, and operate ETL processes that are extensible, scalable, and easy to change and can transform many different data structure formats.
CR-244	The Vendor shall procure, implement, operate and maintain an ETL Management Tool that supports the ETL activities within the solution.
CR-245	The Vendor shall provide an ETL Management Tool that supports connectivity, extraction, transformation, and loading activities with a variety of data sources (e.g. RDBMS, NoSQL, Big Data, and Flat File repositories).
CR-246	The Vendor shall provide an ETL Management Tool that supports collection of data transformation functions such as data type conversion, data reformatting, date manipulation, string handling and regular expressions.
CR-247	The Vendor shall provide an ETL Management Tool that uses a GUI-based or Web-based development environment for the design, development, and implementation of complex ETL processes.
CR-248	The Vendor shall provide an ETL Management Tool that uses a GUI-based Job Scheduler and supports connectivity to and interaction with industry-standard enterprise Job Scheduler technologies.
CR-249	The Vendor shall provide an ETL Management Tool that supports connection to industry standard Job Scheduler tools.
CR-250	The Vendor shall provide an ETL Management Tool that uses runtime monitoring, alerts, error handling, and logging.
CR-251	The Vendor shall provide an ETL Management Tool that supports data quality management functionality with both automated and user-defined quality control capabilities.
CR-252	The Vendor shall provide an ETL Management Tool that supports data cleansing functionality capable of detecting and correcting or removing inaccurate or malformed data.
CR-253	The Vendor shall maintain a copy of the data in its pre-ETL State based on Agency agreed data retention timeline. The copies must be readily available to Authorized Solution Users and stored in an industry standard file format. Copies of pre-ETL data will be used to verify that data was transformed properly in the event all or part of the ETL process fails.
CR-254	The Vendor shall implement the capability to accept, transform, and load all HIPAA X12 and National Council for Prescription Drug Programs (NCPDP) transactions either via an IS/IP Interface or Electronic Data Interchange (EDI) transaction into the solution.

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4) Additional Solution Capabilities

Table: 22 - List of Additional Solution Capabilities below, summarizes the additional Solution Capability requirements for the EDW Project.

Table: 22 - List of Additional Solution Capabilities	
Req ID	Requirement
CR-255	The Vendor shall propose solutions for utilizing Machine Learning capabilities within the Agency. Options for consideration include Automation of Data Redaction, Workflow Analysis and Automation, Predictive Analytics, Electronic Health Record Management, and the building and analysis of a Healthcare Knowledge Base.
CR-256	The Vendor shall implement a Consent Management solution for allowing recipients to determine and express what information the Agency will be permitted to access and share with other entities.
CR-257	The Vendor's solution shall include data anonymization services at all relevant levels to comply with HIPAA and all other Federal, State and Agency Privacy and Security requirements. The anonymization process shall support post-anonymization analysis and shall provide this functionality within ETLs, Specialized Data Stores and Data Marts.
CR-258	The Vendor shall implement a solution that performs automated Medicaid financial balancing. The financial balancing processes shall provide process start and completion dates and times, source record counts, and dollar amounts (where appropriate), target record counts and dollar amounts (where appropriate). All balancing report data shall be stored as a data structure within the ODS.
CR-259	The Vendor shall design, develop, implement, maintain and operate a secure web portal for public access to data, reports, and dashboards approved by the Agency for public consumption.
CR-260	The Vendor shall provide a solution that will receive and utilize data updates via delta files processing.
CR-261	The Vendor shall design, develop, implement, maintain, and operate archiving solution as defined in the Technology Standards, located in the EDW Procurement Library , where the data is properly maintained, accessible, retained, archived, and protected from destruction.
CR-262	The Vendor shall procure, operate and maintain a Data Version Control tool that addresses retrieval of specific versions of data for later analysis.
CR-263	The Vendor shall procure, operate and maintain a data sharing Agreement tool that provides for sharing, management, and stewardship of data across the Agency and its stakeholders.
CR-264	The Vendor shall implement, maintain and operate an Enterprise Batch processing framework for all batch and interface processing. The batch process must integrate with the Enterprise job scheduler.

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Table: 22 - List of Additional Solution Capabilities	
Req ID	Requirement
CR-265	The Vendor shall design, develop, implement, maintain, and operate an Audit Framework that provides the functionality of an audit trail on all changes to the solution with business and system dates, begin date, effective date, end date, and user-id, and assignment/ enforcement in all tables which can be modified.
CR-266	The Vendor shall design, develop, implement, maintain, and operate an Audit Framework that provides common web-services for the modules and Agency IT systems to store transaction audit information in the Operational Data Store.
CR-267	The Vendor shall provide Authorized Users with the ability to search, view, print, export, and analyze audit data through a User Interface.

3. Project Life Cycle Tool Requirements

This section describes requirements for the Vendor to provide or use specific tools during the performance of professional services under this Contract.

The FX Project Team will evaluate and provide ongoing guidance to the Vendor on the Agency's requirements for use of specific system delivery management tools. The Vendor's responsibility to use and provide a Project Life Cycle tool from the following options:

- Vendor Preference - Vendor has discretion to select and use the Vendor's preferred tool;
- Agency Preference – Vendor has discretion to select and use Vendor's preferred tool considering Agency preference considerations such as Agency use or licensing;
- Agency Specified - Vendor is to provide and use an Agency specified tool;
- Agency Provided - Vendor is to use an Agency-provided solution or managed service;
- Multi-Agency Service - Vendor is to use a Florida multi-Agency provided solution or managed service.

a. Project Management Tool Requirements

Project Management Tools to be provided or used by the Vendor are located in the [EDW Procurement Library](#). The Vendor shall propose use of additional tools required to perform Services of this Contract. Subject to Agency approval, the Vendor may use alternate tools. Optionally, upon request by the Agency, the Vendor shall procure, configure, implement and maintain Project Management tools for FX Projects.

b. System Delivery Management Tool Requirements

System Delivery Management Tools to be provided or used by the Vendor are located in the [EDW Procurement Library](#). The Vendor shall propose use of additional tools required to perform Services of this Contract. Subject to Agency approval, the Vendor may use alternate tools. Optionally, upon request by the Agency, the Vendor shall procure, configure, implement, and maintain System Delivery Management tools for FX Projects.

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F. Services Requirements

1. Contract Wide Services Requirements

This section defines requirements for Vendor provided services that are applicable to all projects, project stages, and phases of work performed under this Contract.

a. Reporting Requirements

The Vendor shall provide a reporting solution that meets the business needs across the entire Agency. The reporting solution shall comply with all Federal and State reporting requirements. The proposed solution shall provide an array of reporting and analytic tools.

The Vendor shall adhere to reporting requirements included in this section. The Agency reserves the right to direct the Vendor to amend or update its reports and/or report formats in accordance with the best interests of the Agency and at no cost to the Agency. The Agency will notify the Vendor of such modification, in writing.

All electronic transmission of reports and supporting documentation containing Protected Health Information (PHI) and Personally Identifiable Information (PII) as defined by the Health Insurance Portability and Accountability Act (HIPAA) shall be encrypted to meet the HIPAA privacy standards. Unless otherwise directed by the Agency, all electronic reports shall be formatted utilizing Microsoft Word or Excel, version 2016 or greater. Supporting documentation may be submitted in Adobe PDF format. The Vendor shall upgrade its electronic report format as directed by the Agency.

Administrative report formats shall be finalized and approved by the Agency no later than thirty (30) calendar days after execution of this Contract, unless otherwise agreed to by the Agency.

The Vendor shall develop reports, using formats approved in advance by the Agency, complying with the requirements established by the Agency. When reporting requirements are not established in this Contract, the Agency will provide the Vendor with instructions and submission timetables. The Agency reserves the right to modify reporting formats and submission timetables resulting from changing priorities or management direction. All reports shall be developed and produced **at no additional cost to the Agency.**

1) Monthly Reporting

- a) The Vendor shall submit monthly reports. At a minimum, monthly reports shall include the following:
 - Monthly EDW Project Status Report (see **FX Project Management Standards**, located in the [EDW Procurement Library](#)); and
 - Monthly Vendor Staffing Report.
- b) The Vendor shall submit a monthly Vendor Staffing Report to include its staff organization chart; roles, responsibilities, and authority for all staff; staff acquisition and release dates; resource calendars; and identification of any staffing level deficiencies and the status of the

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actions taken to resolve identified deficiencies. Monthly reports shall be due on the second (2nd) calendar day of each month following the reporting month. If the second (2nd) calendar day falls on a weekend or holiday, then the report is due on the next business day.

- 2) Ad Hoc Analysis and Reports
 - a) The Agency reserves the right to request the Vendor to conduct ad hoc analyses and provide ad hoc reports. In such instances, the Agency will make the request in writing.
 - b) The Vendor shall provide ad hoc reports on an as needed basis **at no additional cost to the Agency**. Ad hoc reports may be requested on any aspect of the data collected by the Vendor.
 - c) Ad hoc reports shall be submitted to the Agency within fourteen (14) calendar days from the time of the request, unless the Agency directs the Vendor to provide the data or information in less than fourteen (14) calendar days. If the fourteenth (14th) calendar day falls on a weekend or holiday, then the report is due on the next business day.

2. Project Management Life Cycle Requirements

The Vendor shall perform Project Management for the duration of this Contract. The Vendor shall employ a sound project management methodology and shall maintain compliance with **FX Project Management Standards** and the accompanying **FX Project Management Toolkit**, which set forth the expectations and requirements for managing all FX Projects. The **FX Project Management Standards** document and **FX Project Management Toolkit** are located in the [EDW Procurement Library](#).

a. Project Management Requirements – Contract Wide

1) Standards

The **FX Project Management Standards** articulate how an FX Vendor shall strive to achieve project management goals and manage successful FX Projects. The FX Project Vendors shall adhere to integrated processes designed to support the effective governance and management of all projects within the FX Portfolio. Descriptions are provided for each process in the **FX Project Management Standards** document and include integrated:

- Project change, risk, action item, issue, decision, and lessons learned management;
- Schedule management;
- Organizational change management;
- Cost management;
- Status reporting;
- Resource management;

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- Requirements management;
- Quality management;
- Configuration management;
- Information management;
- Communications management; and
- Requirements for CMS certification.

3. System Delivery Life Cycle Phase Requirements

This section describes system delivery life cycle phase specific Vendor requirements associated with providing system delivery management services under this Contract.

a. Initiation Phase Requirements

Design and Implementation Management Standards document, located in the [EDW Procurement Library](#), summarizes development phase requirements and standards for concept phase services performed and solutions provided by FX Projects under this Contract.

b. Planning Phase Requirements

Design and Implementation Management Standards document, located in the [EDW Procurement Library](#), summarizes development phase requirements and standards for planning phase services performed and solutions provided by FX Projects under this Contract.

c. Requirements Analysis Phase Requirements

Design and Implementation Management Standards document, located in the [EDW Procurement Library](#), summarizes requirements analysis phase requirements and standards for services performed and solutions provided by FX Projects under this Contract.

d. Design Phase Requirements

Design and Implementation Management Standards document, located in the [EDW Procurement Library](#), summarizes design phase requirements and standards for services performed and solutions provided by FX Projects under this Contract.

1) Data Modeling Requirements

Table: 23 - Data Modeling Requirements below, summarizes the Data Modeling requirements for services performed and solutions provided by FX Projects under this Contract.

Table: 23 - Data Modeling Requirements	
Req ID	Requirement
SR-001	The Vendor shall design, develop, implement, maintain, and operate an enterprise Data Model encompassing the business processes, practices and policies of the Agency and which incorporates current industry standard tools and technologies.

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Table: 23 - Data Modeling Requirements	
Req ID	Requirement
SR-002	The Vendor shall design, develop, and implement an enterprise Data Model capable of growing and evolving with increased Agency capacity and performance requirements which allows for the implementation of changes of various degrees of complexity based upon Agency needs, Legislative mandates, and other Agency defined modifications.
SR-003	The Vendor shall procure, install, operate, and maintain an enterprise Data Model Management Tool that supports all Data Modeling activities within the solution.
SR-004	The Vendor shall provide a Data Modeling tool that supports data governance, accountability, and enforcement of metadata standards.
SR-005	The Vendor shall conform to data naming standards as defined by National Information Exchange Model (NIEM) and Health Level 7 (HL7). The Vendor shall review all updates to NIEM and HL7 standards, present any updates to the Agency and apply to the Enterprise Data Model any updates approved by the Agency.
SR-006	The Vendor shall provide a Data Modeling tool that supports the design, development, and visualization of Conceptual Data Model structures and schemas.
SR-007	The Vendor shall provide a Data Modeling tool that supports the design, development, and visualization of Logical Data Model structures and schemas. Further, the tool shall support the implementation of Logical Data model schemas from Conceptual Data model structures and schemas.
SR-008	The Vendor shall provide a Data Modeling tool that supports the design, development, and visualization of Physical Data Models. Further, the tool shall support implementation of Physical Data model schemas from Logical schemas.
SR-009	The Vendor shall provide a Data Modeling tool that supports the design, development, and implementation of Conceptual, Logical, and Physical Data Models for all major RDBMS platforms and that supports NoSQL visualization and modeling concepts and practices.
SR-010	The Vendor shall provide a Data Modeling tool with a GUI or Web-based interface for Design, Development, and Maintenance of Conceptual, Logical, and Physical data models.
SR-011	The Vendor shall provide a Data Modeling tool that supports Cross-Database table relationships.
SR-012	The Vendor shall provide a Data Modeling tool that supports the import and export of Entity Relationship Diagrams (ERD) from industry standard Data Modeling tools.
SR-013	The Vendor shall provide a Data Modeling tool that supports multi-dimensional data objects (e.g. data cubes, customized tables, Data Marts, materialized views), derived data and aggregated data (e.g. total claim costs, unique member counts, units of service, benchmarks, baselines).

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Table: 23 - Data Modeling Requirements	
Req ID	Requirement
SR-014	The Vendor shall provide a Data Modeling tool that supports global data model search functionality.

e. **Development Phase Requirements**

Design and Implementation Management Standards document, located in the [EDW Procurement Library](#), summarizes development phase requirements and standards for services performed and solutions provided by FX Projects under this Contract.

f. **Testing Phase Requirements**

Table: 24 - Testing Phase Requirements below, summarizes the Testing Requirements for services performed and solutions provided by FX Projects under this Contract.

Table: 24 - Testing Phase Requirements	
Req ID	Requirement
SR-015	The Vendor shall develop a Test Plan that includes objectives, scope, testing strategy, testing type, entrance and exit criteria, schedule, testers, and software testing tools to be used for the solution.
SR-016	The Vendor shall coordinate with the FX Project Team, the IS/IP Vendor, and the FX Module Vendors to develop and execute the Test Plan for all defined functionality, connectivity and communications between the solution, the Integration Platform, and the FX modules.
SR-017	<p>a. The Vendor shall provide non-production environments and perform the testing for the following activities: <u>Integration Testing</u>: End-to-end testing performed to expose defects in the interfaces and in the interactions between integrated module components or other systems and validate the system's readiness to meet non-functional requirements.</p> <p>b. <u>System Testing</u>: The process of demonstrating a program, function, or integrated system components meet its requirements and objectives as stated in PD-5: Requirements Document.</p> <p>c. <u>Regression Testing</u>: Testing of a previously tested function following modifications to verify defects have not been introduced or uncovered from changes made. It is performed each time the software or its environment is changed and involves automated testing scripts.</p> <p>d. <u>Performance Testing</u>: Verifies the performance of a system will meet Performance Standards and measures the behavior of the system with increasing load (e.g. number of parallel users and numbers of transactions to determine what load can be handled by the system).</p> <p>e. <u>User Acceptance Testing (UAT)</u>: Testing conducted by the Agency to determine whether a system satisfies the defined user acceptance criteria in an isolated environment.</p>

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Table: 24 - Testing Phase Requirements	
Req ID	Requirement
SR-018	The Vendor shall conduct and report to the Agency all component and product testing, completion of testing sequences, and any dynamic analysis employed to verify the execution of testing defined sequences.
SR-019	The Vendor shall coordinate with the Agency in managing the execution of testing including the setup of shared resources, the setup of any testing instrumentation, conducting of all tests, and documentation of all test results and defect tracking.
SR-020	The Vendor shall perform testing and present the results, as prescribed in Test Results for each of the following test levels: Unit Test Results, System Test Results, Integration Test Results, Regression Test Results, Performance Test results, Parallel Test Results, Build Verification Test Results, and User Acceptance Test Results.
SR-021	The Vendor shall map all the test results back to the Requirements Specification Document and Requirements Traceability Matrix (RTM), mapping the use case, test case, test script, and design of the solution.
SR-022	The Vendor shall conduct performance testing of end-to-end business processes within the solution during the initial build, enhancement and after implementation of each new module to meet or exceed performance standards and meet or exceed all Key Performance Indicators.
SR-023	The Vendor shall, in coordination with the FX Project Team, the IS/IP Vendor, and FX Module Vendors, participate, document and present to the Agency performance testing of end-to-end business processes within FX Projects to conform to the performance standards and meet or exceed all Key Performance Indicators.
SR-024	The Vendor shall conduct Performance Testing under simulated user loads consistent with actual loads projected or used in production.
SR-025	The Vendor shall plan and execute testing for all inbound and outbound files to verify accurate and secure data transmission.
SR-026	The Vendor shall plan and coordinate with users, Module Vendors, and external stakeholders in advance to test all inbound and outbound interfaces.
SR-027	The Vendor shall, in coordination with the FX Project Team, the IS/IP Vendor, and FX Module Vendors, test all Data Services.
SR-028	The Vendor shall plan, conduct, document, and present to the Agency Conversion, Migration, Replication and ETL process Testing; verifying accurate and secure data transmission during all Conversion, Migration, Replication, and ETL processes.
SR-029	The Vendor shall provide the Agency with access via SharePoint or other online repository, to the test cases, test results, and defect tracking tools which the Vendor developed or used for testing the solution.
SR-030	The Vendor shall provide sufficient time in the approved Project Schedule for UAT testing. The Vendor shall extend user acceptance testing if the proposed

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Table: 24 - Testing Phase Requirements	
Req ID	Requirement
	testing duration is insufficient for the Agency to validate the module, at no additional cost to the Agency.
SR-031	The Vendor shall establish and maintain User Acceptance Testing (UAT) environments and support UAT testing for the Agency to conduct continuous UAT testing in dedicated environments. As part of Test Plan, responsibilities include assisting the SEAS vendor to develop UAT test cases, providing test data, refreshing test data on an agreed upon schedule with complete data and files, executing processes, and migrating releases or code fixes as requested on an agreed upon schedule.
SR-032	The Vendor shall provide the Agency with access to the test cases, test results, and defect tracking tools which the Vendor developed or used for testing the solution.
SR-033	The Vendor shall participate in and support the User Acceptance Testing (UAT) for updates to the solution (e.g. configuration, development, defects, maintenance, enhancement, and mass adjustment activities and requests) or any independent testing of the solution.
SR-034	The Vendor shall provide training to the Agency and other stakeholders on the solution, process, and tools which shall be used to execute UAT and training on the operation of the technical environment to support user validation.
SR-035	The Vendor shall provide Testing, Performance, and UAT environments that are built to mirror the Production System in configuration for infrastructure, databases, processing, file structures, and reporting.
SR-036	The Vendor shall design, document, and present to the Agency detailed test cases for each sub-phase of testing. The test cases shall include identifications, detailed steps, expected results and actual test results; pass/fail ratio; number of defects identified, and number of defects corrected.
SR-037	The Vendor shall obtain Agency approval of all testing phases and all test results before Testing is considered completed.
SR-038	The Vendor shall track and report all defects during testing and resolve them as agreed.
SR-039	The Vendor shall include automated testing tools which work with the solution and are needed to adequately test the solution.
SR-040	The Vendor shall test message-oriented interactions using integration testing tools (e.g. SoapUI).
SR-041	The Vendor shall provide a process for extracting data from the production environment and importing into non-production environments. The Vendor shall keep the data all Test regions refreshed on a schedule agreed upon with the Agency and whenever enhancements are implemented.
SR-042	The Vendor shall mask any sensitive data from the production environment for use in non-production environments unless the data owner authorizes the use of data in the non-production environment.

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Table: 24 - Testing Phase Requirements	
Req ID	Requirement
SR-043	The Vendor shall execute performance tests of a simulated user load consistent with the actual load projected or used in production.

g. Implementation Phase Requirements

The EDW Vendor shall provide Engagement Management activities to engage the project stakeholders for the purposes of coordinating implementation activities.

Table: 25 - Implementation Phase Requirements below, summarizes the Implementation Requirements for services performed and solutions provided by FX Projects under this Contract.

Table: 25 - Implementation Phase Requirements	
Req ID	Requirement
SR-044	If requested by the Agency, the Vendor shall utilize Agency IT Change Control Tools and processes for implementation and changes to the solution.
SR-045	The Vendor shall participate in both face-to-face meetings and conference calls with the Agency and relevant parties for purposes of coordinating projects and implementation activities.
SR-046	The Vendor will submit schedules and agendas twenty-four (24) hours prior to the sessions and shall within twenty-four (24) hours of each meeting provide meeting minutes for review by the Agency and all other meeting attendees.
SR-047	The Vendor shall manage interaction and communication with Agency staff, FX Vendors, and subcontractors during the project engagement to support successful implementation of the Scope of Services.
SR-048	The Vendor shall produce and deliver to the Agency the PD-20 Production Readiness Review Checklists which examines the actual characteristics and the procedures of the solution's operation to confirm all hardware, software, resources, procedures, and user documentation accurately reflect the updated production system.
SR-049	The Vendor shall conduct an Operational Readiness Review (PD-22) with the Agency to validate the operational readiness of the Vendor and the solution. The Agency will formally sign off on the PD-22 Operational Readiness Review and Stage Gate Review Checklist prior to proceeding to implementation.
SR-050	The Vendor shall provide to the Agency Production Readiness test results demonstrating the solution meets all Performance Standards as defined in this Contract.
SR-051	The Vendor shall perform an implementation process and shall work with the Agency for deploying each proposed solution into production. This would include submitting an implementation plan to the Agency for approval, facilitating an Implementation Plan walkthrough with the stakeholders, deploying the solution,

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Table: 25 - Implementation Phase Requirements	
Req ID	Requirement
	and submitting request for the Agency's acceptance of the system implementation.
SR-052	The Vendor shall monitor and correct any deficiencies during the initial operation of the solution to verify there are no immediate or ongoing adverse effects on the Agency's programs according to the performance expectations identified in the Vendor's Contract.
SR-053	The Vendor shall demonstrate and report to the Agency the system infrastructure (hardware, software, and interfaces) is operational and meets Federal and Agency architectural, technical, security, and privacy requirements as well as the documented and approved business and functional requirements.
SR-054	The Vendor shall develop and submit a Post Implementation Report (PD-21) which details assessments of the implementation, lessons learned, and monitoring information from the system/application that has been implemented.

h. Operations and Maintenance Phase Requirements

Table: 26 - Operations and Maintenance Phase Requirements below, summarizes the Operations and Maintenance requirements for services performed and solutions provided by FX Projects under this Contract.

Table: 26 - Operations and Maintenance Phase Requirements	
Req ID	Requirement
SR-055	The Vendor, upon system acceptance from the Agency shall provide ongoing Operations and Maintenance support to the project solution throughout the life of this resulting Contract, which includes maintenance and enhancement to the solution. Maintenance activities include correcting defects found based on the requirements, configuration updates, updating the solution to implement policy and coverage changes, best practices or initiatives, scheduled maintenance, testing, and release management.
SR-056	The Vendor shall follow and perform project management and system development processes throughout the life of this Contract as stated in the Project Management Plan deliverable.
SR-057	As part of PD-19 Operations and Maintenance Manual , the Vendor shall provide system and maintenance reports to the Agency to include at a minimum: <ul style="list-style-type: none"> • Maintenance activities for Service changes or System Upgrades; • Activities necessary to correct deficiencies; • Activities necessary to meet performance requirements; • Activities necessary to verify audit logs, programs, and documentation are current; • Changes to scripts or system parameters concerning frequency, number, sorting, and generation of transaction reports; • Additions of new configuration settings, SOA modifications, service modifications;

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Table: 26 - Operations and Maintenance Phase Requirements	
Req ID	Requirement
	<ul style="list-style-type: none"> • Perform critical patch updates to systems due to Operating System level threat vulnerabilities; • Track issues reported and issue resolutions during operations; • New modules or the Agency IT systems which integrate with the project solution; and • Upon receiving Agency approval, upgrade and maintain software of the most recent versions.
SR-058	The Vendor shall operate and maintain and update the infrastructure of the solution, and provide integration with the IS/IP platform, complying with all Performance Metrics and Federal, State, and Agency regulatory requirements.
SR-059	The Vendor shall provide a notification mechanism whereby all entities identified by the Agency can be notified of system down time and restored availability for scheduled maintenance or unscheduled outages.
SR-060	The Vendor shall minimize system outages by implementing architecture which supports failovers. If needed, the Vendor shall notify the Agency and other stakeholders, in advance of scheduled maintenance or system outages.
SR-061	The Vendor shall monitor the solution for any security breach and shall respond in a timely manner to any issue discovered. Further, the Vendor shall place security controls on the solution as defined in the Security Plan deliverable.
SR-062	The Vendor shall produce, maintain, and update an inventory of all <i>solution-related</i> configuration items, including but not limited to: product type; licensing info; versions; maintenance information; patch fixes; upgrades; and releases. The Vendor shall provide this inventory upon request by the Agency or Agency Designee.
SR-063	The Vendor shall maintain and update a reference material (e.g. manuals, help screens, design specification, system documentation) repository and shall notify the Agency of any and all updates to reference materials. The format of all materials stored in the repository must be preapproved by the Agency.
SR-064	The Vendor shall cooperate with and assist the Agency in responding to any and all law enforcement, Federal, State, and Agency audit or review requests. The Vendor-provided support shall include but not be limited to random sample generation, data extracts, hard-copy documents, and any requested data or information within the timeframe provided by the Agency.
SR-065	The Vendor shall develop a System Operational Procedures Manual with the proposed format for ODS Support Services Operational Procedures Manual, which provide guidelines for the operation and use of ODS Support Services. At minimum, the System Operational Procedures Manual shall contain policies, processes, and workflows related to the Core FX, and Supporting Services and general requirements for compliance with privacy and security.
SR-066	The Vendor shall provide all support and maintenance necessary for continued usability of the solution including Data Stores, Data Services, Data Replication, ETL processes, DR/BCP procedures and all application, session, and presentation layer activities required for the solution meet all Contract requirements.

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Table: 26 - Operations and Maintenance Phase Requirements	
Req ID	Requirement
SR-067	The Vendor shall, in coordination with the FX Project Team, develop and implement processes, and procedures whereby all data contained within the solution is accurately and securely archived in a timely manner, and that all Federal, State, and Agency laws and policies are followed.
SR-068	The Vendor shall store all documentation pertaining to the design, development, implementation, operations, and maintenance of the solution on a designated server, SharePoint site or similar document repository as specified by the FX Project Team.

i. Help Desk / Incident Management

Table: 27 - Help Desk / Incident Management Requirements below, summarizes the Helpdesk requirements for services performed and solutions provided by FX Projects under this Contract.

Table: 27 - Help Desk / Incident Management Requirements	
Req ID	Requirement
SR-069	The Vendor shall provide help desk system and services for the solution to record and maintain helpdesk tickets. Alternatively, and at Agency's direction, the Vendor shall use the Agency's help desk solution to record and maintain tickets.

j. Training Requirements

Table: 28 - Training Requirements below, summarizes the Training Requirements for services performed and solutions provided by FX Projects under this Contract.

Table: 28 - Training Requirements	
Req ID	Requirement
SR-070	For the users, project vendors, and Agency staff, (as part of PD-18) the Vendor shall develop and implement a written and customized Training Plan which includes webinars, web-based modules, and face-to-face training. The Vendor shall coordinate with the Agency's Organizational Change Management team about appropriate tools, templates, and standards to use for the Organizational Change Management work products and artifacts.
SR-071	The Training Plan shall address the training for the solution of this Contract including a schedule for all activities to train team members and provide continuous training as needed for this Contract period.
SR-072	The Agency reserves the right to direct the Vendor to amend or update its Training Plan at no additional cost to the Agency.

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Table: 28 - Training Requirements	
Req ID	Requirement
SR-073	The Vendor shall create and maintain training materials for the required components of this Contract.
SR-074	All training materials, which include manuals, brochures, handouts, agendas, presentations, and web-based or electronic communications, shall be prior approved by the Agency.
SR-075	All training materials shall be reviewed and updated on a quarterly basis to reflect current and updated functionality.

k. Warranty Requirements

The EDW Vendor shall warrant the EDW Solution meets the CMS certification requirements, the Contract requirements as defined in this solicitation, the design and development documents, and the system documentation for one (1) year from the beginning of the Operation Phase. The Vendor shall agree to remedy any technical design, configuration, or code defects developed under this Contract, for a period of one (1) year from the day the operations begins **at no additional cost to the Agency**. At the end of the warranty period, the Vendor shall submit a Warranty Completion Report (**PD-23**).

The warranty support shall include testing to isolate problems, problem correction for Critical and High issues as defined in **Attachment B, Exhibit B-1: Deliverables and Performance Standards**, integrated testing of any warranty repair to verify it is complete and appropriate, and regression testing to avoid other problems created by the warranty repair.

The Vendor shall coordinate, install, and test repaired systems with the Agency and update all documentation affected by the change which is approved by the Agency. For critical problems which prevent complete operations of the solution, the Vendor shall provide a workaround for the problem which is preapproved by the Agency.

The Vendor shall provide the Agency the full standard warranty available for any COTS software required for the solution and purchased through or provided by the Vendor. The Vendor, if other than the Original Software Licensor, shall be responsible for paying any original software Licensor maintenance costs sufficient to verify the Agency is properly licensed to use the COTS software for the purpose intended by this Contract and the project functionality for which it was purchased.

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Disposition Phase Requirements

Table: 29 - Disposition Phase Requirements below, summarizes the requirements to decommission systems for services performed and solutions provided by FX Projects under this Contract.

Table: 29 - Disposition Phase Requirements	
Req ID	Requirement
SR-076	The Vendor may, if directed, support the Agency in providing or contracting to provide disposition activities of any systems decommissioned during this Contract.
SR-077	The Vendor shall provide materials to support subsequent disposition of solution components.

4. Security Life Cycle

Security related activities have their own life cycle that overlay the system delivery life cycle. The Security Life Cycle includes activities defined in certification and accreditation, risk assessment, and system security plan phases.

Table: 30 - Security Life Cycle Requirements below summarizes the Security Life Cycle Requirements for the EDW Project.

Table: 30 - Security Life Cycle Requirements	
Req ID	Requirement
SR-078	The Vendor shall coordinate with the FX Project Team, the IS/IP Vendor, and the FX Module Vendors to develop a Systems Security Plan in accordance with the CMS Risk Management Handbook, Chapter 12.
SR-079	The Vendor shall coordinate with the FX Project Team, the IS/IP Vendor, and the FX Module Vendors to conduct a Privacy Impact Assessment.
SR-080	The Vendor shall coordinate with the FX Project Team, the IS/IP Vendor, and the FX Module Vendors to select appropriate baseline controls based on NIST SP 800-53, the standards defined by the Agency and Florida Cybersecurity Standards (FCS).
SR-081	The Vendor shall develop and execute a Security Controls Test Plan that includes objectives, scope, misuse cases, testing type, entrance and exit criteria, schedule, testers, software tools, and test results.
SR-082	The Vendor shall coordinate with the FX Project Team, the IS/IP Vendor, and the FX Module Vendors to develop and execute a Security Test Plan for all shared infrastructure, connectivity, and communications between the solution, the Integration Platform, and the FX modules.

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Table: 30 - Security Life Cycle Requirements	
Req ID	Requirement
SR-083	The Vendor shall conduct quarterly Security Control Assessments to monitor ongoing effectiveness of implemented security controls and remediate those issues as determined by the Agency. Automation may be leveraged wherever possible to reduce effort and support repeatability.
SR-084	The Vendor shall coordinate with the FX Project Team, the IS/IP Vendor, and the FX Module Vendors to develop the Security Authorization Package required for Authorization to Operate approval.
SR-085	The Vendor shall provide a System Security Plan for the solution, which shall be in compliance with all Florida and Federal enterprise information security policies, standards, security initiatives, and regulations.
SR-086	The Vendor shall perform a security vulnerability assessment (using Agency specified scanning tools) on the solution, no less than quarterly and after every Production update release.
SR-087	The Vendor shall provide risk assessments, vulnerability testing, and security audit reports which shall be submitted to the Agency on a monthly basis and when additions or changes to functionality impact the security framework, architecture, or when a new vulnerability exists. The reports shall be delivered to the Agency by the 10 th each month.

5. Certification Life Cycle

The EDW Vendor is responsible for providing and maintaining a technical solution which supports all applicable requirements (as per the **EDW MMIS Certification Checklist**, located in the [EDW Procurement Library](#)), including the most current version of the Medicaid Enterprise Certification Life Cycle (MECL), for Federal certification and qualifying for the maximum Federal Financial Participation (FFP) from Day 1 of the Operations Phase. During the certification process, the Vendor shall make any changes required by the Federal government for certification expediently and without additional charge to the Agency.

Table: 31 - Federal Certification Requirements below, summarizes certification requirements for the Vendor in support of other FX module projects and in the role of a Module Vendor for the EDW Solution and services. The Module Vendors are responsible for the certification of the module/components within their Contract. The Vendor shall be responsible for providing and maintaining a technical solution which meets all applicable checklist items in the most current version of the Medicaid Enterprise Certification Toolkit (MECT) providing evidence and artifacts to document checklist compliance and support the review and validation of those items by the FX Project Team, IV&V Vendor, and CMS.

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Table: 31 - Federal Certification Requirements	
Req ID	Requirement
SR-088	The Vendor shall participate and provide support as needed to the Module Vendors for module certification activities including participating in planning activities, meetings, and other activities as required by CMS.
SR-089	The Vendor shall assist the Agency in preparing and providing certification artifacts, evidence and presentation materials.
SR-090	The Vendor, based on the certification findings, shall provide all the required remediation activities on a schedule to be approved by CMS and the Agency.
SR-091	The Vendor shall update the documentation as necessary to support the certification process and to reflect changes which have been made to the solution during the certification process.
SR-092	The Vendor shall support the IV&V quarterly certification report to CMS by providing the IV&V Vendor access to documents and artifacts necessary for tracking certification.
SR-093	The Vendor shall provide applicable documentation of requirements as included in the Certification process for each applicable FX Project.
SR-094	The Vendor shall provide a Certification Lead who will coordinate with the Agency, SEAS and IV&V Certification counterparts on all activities related to Certification including understanding the Medicaid Enterprise Certification Management Plan.
SR-095	The Vendor shall support the MECL process for all components which are certified, as described in the current version of the MECT.
SR-096	The Vendor shall adhere to Medicaid Enterprise Certification Management Plan.

a. Enhanced Funding Requirement - CMS Standards and Conditions

1) Federal Citations

The EDW Vendor shall comply with 42 CFR 433.112 (b)(5) and (6) and 45 CFR 95.617(a) and (b), including the CMS Standards and Conditions as well as any amendments from CMS. The Agency will have all ownership rights in software or modifications thereof and associated documentation designed, developed, or installed with Federal financial participation; and The United States Department of Health and Human Services (US DHHS) will have a royalty free, non-exclusive, and irrevocable license to reproduce, publish, or otherwise use and authorize others to use, for Federal Government purposes, software, modifications to software, and documentation that is designed, developed, installed, or enhanced with Federal financial participation.

To maximize Federal Financial Participation (FFP), this Project and its Scope of Services is aligned with the CMS Standards and Conditions for Enhanced Funding in accordance with 42 CFR 433.112.

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For additional information see: 42 CFR 433.112 - FFP for design, development, installation or enhancement of mechanized processing and information retrieval systems.

2) State Ownership

The Agency shall have unlimited rights to use, disclose, or duplicate, for any purpose whatsoever, all information and data developed, derived, documented, or furnished by the Vendor as a result of this Contract.

Title to the complete system will be transferred to the Agency, including portions (e.g. documentation) as they are created during all phases of this Contract, including any and all performance-enhancing software and operational plans whether developed or obtained by this Contract or before it. This obligation to transfer all ownership rights and/or license on the part of the Vendor is not subject to limitation in any respect whether by characterization of any part of the system as proprietary or by failure to claim for the cost thereof.

The Vendor shall not develop or install any proprietary software for operation of the EDW Solution without prior written approval from the Agency. Installation of any commercial packages must also be prior approved in writing by the Agency. The Agency may allow the development and installation of proprietary software if considered in the best interest of the Agency and if the Vendor is willing to provide the Agency the rights and/or license to operate and maintain the software in question, after the termination of this Contract. No proprietary software/systems may be implemented, using Agency data, without prior written approval from the Agency.

b. MECT Module Checklist Requirements

The EDW Vendor shall be responsible for providing and maintaining a technical solution which meets all applicable checklist items in the most current version of the Medicaid Enterprise Certification Toolkit (MECT) providing evidence and artifacts to document checklist compliance and support the review and validation of those items by the FX Project Team, IV&V Vendor, and CMS.

1) Decision Support System Requirements

Table: 32 - MECT Decision Support System Requirements below, summarizes the MECT MMIS - Decision Support System Requirements for the EDW Solution.

Table: 32 - MECT Decision Support System Requirements	
Req ID	Requirement
SR-097	The Vendor's solution shall provide information to assist management in fiscal planning and control.
SR-098	The Vendor's solution shall provide counts of services based on meaningful units such as but not limited to: <ul style="list-style-type: none"> • service category (e.g. Days, visits, units, prescriptions); • unduplicated claims;

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Table: 32 - MECT Decision Support System Requirements	
Req ID	Requirement
	<ul style="list-style-type: none"> • unduplicated members; and • unduplicated providers.
SR-099	The Vendor's solution shall support online real-time summary information such as, but not limited to, number and type of providers, members and services.
SR-100	The Vendor's solution shall track claims processing financial activities and provides reports on status of payments.
SR-101	The Vendor's solution shall produce unduplicated counts within a type of service and in total by month.
SR-102	The Vendor's solution shall report the utilization and cost of services against benefit limitations.
SR-103	<p>The Vendor's solution shall assist in determining reimbursement methodologies by providing expenditure data through service codes including:</p> <ul style="list-style-type: none"> • healthcare common procedure coding system (HCPCS), current version; • international classification of diseases (ICD), clinical modifier, current version; and • National drug code (NDC), current version.
SR-104	The Vendor's solution shall produce an annual hospice report showing a comparison of hospice days versus inpatient days for each enrolled hospice member and for all hospice providers.
SR-105	The Vendor's solution shall analyze break-even point between Medicare and Medicaid payments.
SR-106	The Vendor's solution shall analyze cost-effectiveness of managed care programs versus fee-for-service.
SR-107	The Vendor's solution shall track the impact of Medicare drug program.
SR-108	The Vendor's solution shall provide information required in the review and development of medical assistance policy and regulations.
SR-109	The Vendor's solution shall report on any change from baseline for any program or policy change.
SR-110	The Vendor's solution shall prepare information to support the preparation of budget allocations for the fiscal year.
SR-111	The Vendor's solution shall support the projection of the cost of program services for future periods.
SR-112	The Vendor's solution shall compare current cost with previous period cost to establish a frame of reference for analyzing current cash flow.
SR-113	The Vendor's solution shall compare actual expenditures with budget to determine and support control of current and projected financial position.
SR-114	The Vendor's solution shall analyze various areas of expenditure to determine areas of greatest cost.

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Table: 32 - MECT Decision Support System Requirements	
Req ID	Requirement
SR-115	The Vendor's solution shall provide data necessary to set and monitor rate-based reimbursement (e.g. institutional per diems and Health Plan capitation).
SR-116	The Vendor's solution shall maintain provider, recipient, claims processing, and other data to support Agency management reports and analyses.
SR-117	The Vendor shall provide a defined and documented process for ensuring MMIS system changes and SS-A to-be maturity are aligned to an approved State plan.
SR-118	The Vendor's solution shall maintain data sets for T-MSIS reporting as required.
SR-119	<p>The Vendor's solution shall merge into T-MSIS data from outside sources if required:</p> <ul style="list-style-type: none"> • Capitation payment records from enrollment process; • Eligibility characteristic data from eligibility intake process; • Medicaid services processed by non-MMIS State departments, such as mental health services; and • Utilization based on Health Plan encounters.
SR-120	<p>SMA provides and The Vendor's solution shall maintain T-MSIS data for the following adjudicated claims:</p> <ul style="list-style-type: none"> • Inpatient hospital; • Long term institutional care; • Prescription drugs; and • Other, not included in the above categories.
SR-121	The Vendor's solution shall provide and maintain encounter data in appropriate claim(s) file.
SR-122	The Vendor's solution shall meet T-MSIS reporting timelines
SR-123	The Vendor's solution shall support Payment Error Rate Measurement (PERM) processing in compliance with CMS quarterly claims sample frequency requirements as directed by the Agency.
SR-124	<p>The Vendor's solution shall produce the CMS-416 report in accordance with CMS requirements. The report shall include:</p> <ul style="list-style-type: none"> • The number of children provided child health screening services, • The number of children referred for corrective treatment, • The number of children receiving dental services, and • The State's results in attaining goals set for the State under section 1905(r) of the Act provided according to a State's screening periodicity schedule.
SR-125	The Vendor's solution shall produce the CMS-372 and CMS-372S Annual reports on Home and Community Based Waiver Reports, for any HCBS Waivers that exist in accordance with CMS requirements.
SR-126	The Vendor shall support Medicaid Agency's compliance with the information reporting requirements of section 6041 of the Internal Revenue Code (26 U.S.C. 6041). Section 6041 requires the filing of annual information returns showing amounts paid to providers, who are identified by name, address, and social security number, or employer identification number.

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Table: 32 - MECT Decision Support System Requirements	
Req ID	Requirement
SR-127	The Vendor's solution shall provide data to support the production of CMS-37 and CMS-64 quarterly estimates and expenditure reports.
SR-128	The Vendor's solution shall provide a full audit trail, as defined by the Agency, to support all transactions (data and information) used to support Medicaid Integrity Audits and generate Federal reports.
SR-129	The Vendor's solution shall review errors in claim and payment processing to determine areas for increased claims processing training and provider billing training.
SR-130	The Vendor's solution shall automatically alert administration when significant change occurs in daily, weekly, or other period payments.
SR-131	The Vendor's solution shall provide claims processing and payment information by service category or provider type to analyze timely processing of provider claims according to requirements (standards) in 42 CFR 447.45.
SR-132	The Vendor's solution shall monitor third party avoidance and collections per State plan.
SR-133	The Vendor's solution shall retain all information necessary to support State and Federal initiative reporting requirements.
SR-134	The Vendor's solution shall provide access to information such as, but not limited to, paid amounts, outstanding amounts, and adjustment amounts to be used for an analysis of timely reimbursement.
SR-135	The Vendor's solution shall display information on claims at any status or location such as, but not limited to, claims backlog, key entry backlog, pend file status, and other performance items.
SR-136	The Vendor's solution shall identify payments by type such as, but not limited to, abortions and sterilizations.
SR-137	The Vendor's solution shall develop third party payment profiles to determine where program cost reductions might be achieved.
SR-138	The Vendor's solution shall maintain information on per diem rates, diagnosis related groups (DRG), resource utilization groups (RUG), and other prospective payment methodologies according to the State plan and monitors accumulated liability for deficit payments.
SR-139	The Vendor shall align development efforts to support Agency goals and objectives (managing long term care costs, acute care, etc.)
SR-140	The Vendor's solution shall review provider performance to determine the adequacy and extent of participation and service delivery.
SR-141	The Vendor's solution shall review provider participation and analyzes provider service capacity in terms of member access to health care.
SR-142	The Vendor's solution shall analyze timing of claims filing by providers to provide fiscal controls and statistical data.

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Table: 32 - MECT Decision Support System Requirements	
Req ID	Requirement
SR-143	The Vendor's solution shall provide access to information for each provider on payments to monitor trends in accounts payable such as, but not limited to, showing increases/decreases and cumulative year-to-date figures after each claims processing cycle.
SR-144	The Vendor's solution shall produce information on liens and providers with credit balances.
SR-145	The Vendor's solution shall produce provider participation analyses and summaries by different select criteria such as, but not limited to: <ul style="list-style-type: none"> • payments; • services; • types of services; and • member eligibility categories.
SR-146	The Vendor's solution shall provide information to assist auditors in reviewing provider costs and establishing a basis for cost settlements.
SR-147	The Vendor's solution shall monitor individual provider payments.
SR-148	The Vendor's solution shall review the utilization of services by various member categories to determine the extent of participation and related cost.
SR-149	The Vendor's solution shall report on dual eligibles pre and post Medicare part D implementation.
SR-150	The Vendor's solution shall analyze progress in accreting eligible Medicare buy-in members.
SR-151	The Vendor's solution shall support analyses of data on individual drug usage.
SR-152	The Vendor's solution shall present geographic analysis of expenditures and member participation.
SR-153	The Vendor's solution shall provide member data (including long term care (LTC), Early Periodic Screening, Diagnosis and Treatment (EPSDT), and insurance information) for designated time periods.
SR-154	The Vendor's solution shall summarize expenditures, based on type of Federal expenditure and the eligibility and program of the member.
SR-155	The Vendor's solution shall provide eligibility and member counts and trends by selected data elements such as, but not limited to, aid category, type of service, age and county.
SR-156	The Vendor's solution shall provide member enrollment and participation analysis and summary, showing utilization rates, payments, and number of members by eligibility category.
SR-157	The Vendor's solution shall support report balancing and verification procedures.
SR-158	The Vendor's solution shall maintain comprehensive list of standard program management (PM) reports and their intended use (business area supported).

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Table: 32 - MECT Decision Support System Requirements	
Req ID	Requirement
SR-159	The Vendor's solution shall maintain a list of users of each standard program management report.
SR-160	The Vendor's solution shall meet Agency-defined time frames and priorities for processing user requests.
SR-161	The Vendor's solution shall maintain records necessary for proper and efficient operation of the State plan including statistical, fiscal, and others necessary for reporting and accountability as required by the Secretary of HHS.
SR-162	The Vendor's solution shall support updates and maintenance of financial transactions in enough detail to support current and prior year 1099s, W-2 and FICA reporting requirements, for personal service care providers and providers of services under self-directed care initiatives.
SR-163	The Vendor's solution shall support the Agency's accounting for recovery payment adjustments received from third parties that do not affect the provider's 1099/W2.
SR-164	The Vendor's solution shall provide a full audit trail to the source of general ledger transactions (e.g. provider credit and adjustment transactions) generated by the MMIS or other supporting financial packages.
SR-165	Vendor shall support the Agency's maintenance of history of claim recovery payments more than expenditures and for distribution to the appropriate parties, including providers, Members, or insurers.
SR-166	The Vendor's solution shall maintain a history of refunds.
SR-167	The Vendor's solution shall support the tracking of Medicare deductibles and coinsurance paid by Medicaid for all crossover claims, by Member and program type.
SR-168	The Vendor's solution shall provide on-line access to accounts receivable and provider credit balances to authorized individuals.
SR-169	The Vendor's solution shall provide support for identification and application of recovery funds and lump-sum payments.
SR-170	The Vendor's solution shall support auditing of incentive payments.
SR-171	The Vendor shall support the Agency's monitoring and tracking of payment for all current incentive programs.
SR-172	The Vendor shall retain all records for the periods required by the Secretary of HHS.

2) Program Integrity Requirements

Table: 33 - MECT Program Integrity Checklist Requirements below summarizes the MECT MMIS - Program Integrity Requirements for the EDW Solution.

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Table: 33 - MECT Program Integrity Checklist Requirements	
Req ID	Requirement
SR-173	The Vendor's system shall identify Member services received for those enrolled in selected programs.
SR-174	The Vendor's solution shall provide the ability to suspend all Medicaid payments to a provider after determining that there is a credible allegation of fraud for which an investigation is pending under the Medicaid program against an individual or entity.
SR-175	The Vendor's solution shall provide the ability to safeguard against unnecessary or inappropriate use of Medicaid services and against excess payments.
SR-176	The Vendor's system shall profile primary care case managers, including all referrals and other services received by their enrollees.
SR-177	The Vendor's system shall perform analysis of rendering, ordering, and billing practices to generate reports of aberrant utilization and/or billing patterns.
SR-178	The Vendor's system shall apply clinically approved guidelines against episodes of care to identify instances of treatment inconsistent with guidelines.
SR-179	The Vendor's system shall generate early warning reports of high cost services and service misutilization based on current payment data to quickly identify high volume practices.
SR-180	The Vendor's system shall automatically identify exceptions to norms of utilization or quality of care standards established by the Agency for any type of Member covered by the State plan.
SR-181	The Vendor's system shall track Federally-assisted program participants separately from other categories of assistance.
SR-182	The Vendor's system shall identify Members who exceed program norms, ranked in order of severity.
SR-183	The Vendor's system shall identify services received by Members who have specified diagnoses.
SR-184	The Vendor's system shall profile all services provided to a Member during a single episode of care.
SR-185	The Vendor's solution shall provide the ability to monitor the statewide utilization control program and assess the quality of services provided.
SR-186	The system shall provide a methodology and generates a report to classify treatment modalities into peer group categories, by diagnosis, or range of diagnosis codes.
SR-187	The system shall have the capability to generate reports of individual Members by peer group.
SR-188	The system shall produce comprehensive statistical profiles of provider health care practices by peer groups for all categories of service(s) authorized under the Medicaid program.
SR-189	The Vendor's solution shall provide the ability for the Agency to use predetermined standards to monitor the following (as per 42 CFR):

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Table: 33 - MECT Program Integrity Checklist Requirements	
Req ID	Requirement
	(1) Therapeutic appropriateness, that is, drug prescribing and dispensing that is in conformity with the predetermined standards; (2) Overutilization and underutilization, as defined in § 456.702; (3) Appropriate use of generic products, that is, use of such products in conformity with State product selection laws; (4) Therapeutic duplication as described in § 456.705(b)(1); (5) Drug-disease contraindication as described in § 456.705(b)(2); (6) Drug-drug interaction as described in § 456.705(b)(3); (7) Incorrect drug dosage as described in § 456.705(b)(4); (8) Incorrect duration of drug treatment as described in § 456.705(b)(5); and (9) Clinical abuse or misuse as described in § 456.705(b)(7).
SR-190	The Vendor's solution shall automatically identify deficiencies and generate reports on levels of care and quality of care by provider type.
SR-191	The Vendor's solution shall automatically report on the details of the practice of providers identified as exceptions or outliers.
SR-192	The Vendor's solution shall provide the capability to profile provider groups and individual providers within group practices.
SR-193	The Vendor's solution shall automatically identify exceptions to norms of practice established by the Agency for any type of provider covered by the State plan.
SR-194	The Vendor's solution shall display all data by National Provider Identifier (NPI) or by a subset of the provider's practice.
SR-195	The Vendor's solution shall report to the State's Medicaid Fraud Control Unit all cases of suspected provider fraud.
SR-196	The Vendor's solution shall provide access to all data elements outlined in the State Medicaid Manual (SMM) Part 11, section 11335 and all additional data required for appropriate analysis of the program.
SR-197	The Vendor tests criteria and develops algorithms for expected outcomes prior to production of reports.
SR-198	The Vendor's solution shall facilitate export of claims-based class groupings such that data can be used by spreadsheet or database software.
SR-199	The Vendor's solution shall support fraud and abuse investigations.
SR-200	The Vendor's solution shall support pattern recognition and provide an automated fraud and abuse profiling system for the ongoing monitoring of provider and Member claims to detect patterns of potential fraud, abuse and excessive billing.
SR-201	The Vendor's solution shall provide and store all utilization reports in the medium designated by the Agency.
SR-202	The Vendor's solution shall provide the flexibility to vary time periods for reporting purposes and to produce reports on daily, monthly, quarterly basis, or other frequency specified by the Agency.
SR-203	The Vendor's solution shall maintain a process to apply weighting and ranking of exception report items to facilitate identifying the highest deviators.

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Table: 33 - MECT Program Integrity Checklist Requirements	
Req ID	Requirement
SR-204	The Vendor shall provide for development and implementation of technical and user training programs.
SR-205	The Vendor's solution shall support fraud investigations by complying with request for access to, and free copies of, any records or information kept by the Agency or its contractors.
SR-206	The Vendor's solution shall use a minimum level of manual clerical effort in providing information that reveals potential defects in level of care and quality of service.
SR-207	The Vendor's solution shall provide ability to perform analyses and produce reports responsive to requests from Title XIX managers, quality improvement organizations (QIO), and State Medicaid fraud control units by means of computerized exception processing techniques.
SR-208	The Vendor's solution shall provide necessary data to support fraud investigations from requests for access to any information kept by providers to which the Agency is authorized access by section 1902(a)(27) of the Social Security Act and § 431.107 of this subchapter.
SR-209	The Vendor's solution shall select claims and encounter data dating back to the appropriate period for the specific research.
SR-210	The Vendor's solution shall support the capability to produce claim and encounter detail and special reports by provider-type and Member classification (e.g. category of service (COS)) and other key variables (e.g. Group Practice, Case).
SR-211	The Vendor's solution shall perform focused review and to generate reports of all reviews undertaken.
SR-212	The Vendor's solution shall suppress processing on an individual within specified categories on a run-to-run basis.
SR-213	The Vendor's solution shall support a retrospective Drug Use Review (DUR) program for ongoing periodic examination (no less frequently than quarterly) of claims data and other records to identify patterns of fraud, abuse, gross overuse, or inappropriate or medically unnecessary care among physicians, pharmacists, and Medicaid beneficiaries, or associated with specific drugs or groups of drugs.
SR-214	The Vendor's solution shall support a post-payment review process for Agency personnel to develop and review: <ul style="list-style-type: none"> (1) Beneficiary utilization profiles; (2) Provider service profiles; (3) Exceptions criteria; and (4) Identifies exceptions so that the Agency can correct misutilization practices of beneficiaries and providers.
SR-215	The Vendor's solution shall investigate and reveal misutilization of the State's Medicaid program services by individual participants and promotes corrective action.

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Table: 33 - MECT Program Integrity Checklist Requirements	
Req ID	Requirement
SR-216	The Vendor's solution shall develop provider, physician, and patient profiles sufficient to provide specific information as to the use of covered types of services and items, including prescribed drugs.

c. MECT Core Checklist Requirements

The EDW Vendor shall be responsible for providing and maintaining a technical solution which meets all applicable checklist items in the most current version of the Medicaid Enterprise Certification Toolkit (MECT) providing evidence and artifacts to document checklist compliance and support the review and validation of those items by the FX Project Team, IV&V Vendor, and CMS.

1) Access and Delivery Requirements

Table: 34 - MECT Access and Delivery Requirements below, summarizes the MECT Core - Access and Delivery Requirements for the EDW Solution.

Table: 34 - MECT Access and Delivery Requirements	
Req ID	Requirement
SR-217	The Vendor's solution shall collect, and store data needed to produce reports consistent with data collection plan to assess quality and appropriateness of care furnished to participants of the waiver program.
SR-218	The Vendor's solution shall support a range of analysis actions. (These include benefit modeling, utilization management, provider-member-health plan profiling, program planning, forecasting, program assessment, provider or contractor performance, quality assurance, fraud detection, comparison of fee-for-service and encounter transactions, statistical analysis, comparative analysis, financial trends, case-mix adjustments.
SR-219	The Vendor's solution shall collect and summarize data for specific user communities (e.g. data marts or cubes) such as Program Analysis staff, research group, Financial Management Unit, Agency executives (e.g. dashboard).
SR-220	The Vendor's solution shall provide reports that for users to drill down from summarized data to detailed data.
SR-221	The Vendor's solution's business intelligence information shall be consistent and reliable with full automation.
SR-222	The Vendor's solution shall limit access to an authorized group of stakeholders.
SR-223	The Vendor's solution user interface or associated interfaces provides text titles for frames to facilitate frame identification and navigation.
SR-224	The Vendor's solution shall conform to usability and design standards set by the State; this includes aesthetics, consistency in the user interface, and visual quality of the interfaces.

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Table: 34 - MECT Access and Delivery Requirements	
Req ID	Requirement
SR-225	The Vendor's solution shall fully comply with section 508 accessibility.
SR-226	The Vendor's solution shall be browser agnostic.
SR-227	The Vendor's solution shall support retrieval and presentation of data associated with geographic indicators such as State, county, and zip code.
SR-228	The Vendor's solution shall support Federal reporting requirements (RP.006) when these requirements are met through the decision support services (DSS).
SR-229	The Vendor's solution shall support at a minimum the following formats and output options: Word; Excel; HTML; Access database; and Graphical User Interface (GUI).
SR-230	The Vendor's solution shall support simple queries and pre-formatted reports that are easy to access, follow a user-friendly protocol, and produce responses immediately.
SR-231	The Vendor's solution shall provide ad-hoc reporting capability that presents summarized information on key factors (e.g. number of enrollees, total dollars paid) to executive staff upon request.
SR-232	The Vendor's solution shall provide ad hoc query capability for retrieval of data relevant to specific operational units (e.g. claims resolution, prior authorization, and medical necessity review).
SR-233	The Vendor's solution transactions shall execute in a time in accordance with the performance standards (Attachment B, Scope of Services, Exhibit B-1, Deliverables and Performance Standards).
SR-234	The Vendor's solution shall collect information in predefined formats.
SR-235	The Vendor's solution shall provide the ability to record and monitor the performance and utilization of resources within the overall system.
SR-236	The Vendor's solution shall generate performance measures for specific business processes using predefined and ad-hoc reporting methods.
SR-237	The Vendor's solution shall protect electronic protected health information (ePHI) from improper alteration or destruction including authentication mechanisms and to corroborate that ePHI has not been altered or destroyed in an unauthorized manner.
SR-238	The Vendor's solution shall verify that a person or entity seeking access to ePHI has proper access authority.
SR-239	<p>The Vendor's solution shall follow regulations govern the safeguard of information about applicants and beneficiaries. The following is the minimal set of information that shall be safeguarded:</p> <ol style="list-style-type: none"> (1) Names and addresses; (2) Medical services provided; (3) Social and economic conditions or circumstances; (4) Agency evaluation of personal information; (5) Medical data, including diagnosis and past history of disease or disability;

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Table: 34 - MECT Access and Delivery Requirements	
Req ID	Requirement
	<p>(6) Information received for verifying income eligibility and amount of medical assistance payments;</p> <p>(7) Income information received from Social Security Administration (SSA) or the Internal Revenue Service (IRS) shall be safeguarded according to the requirements of the agency that furnished the data; and</p> <p>(8) Information received in connection with the identification of legally liable third-party resources.</p>
SR-240	<p>The Vendor's solution shall comply with provisions for Administrative Simplification under the HIPAA of 1996 to provide confidentiality, integrity, and availability of ePHI in transit and at rest:</p> <ul style="list-style-type: none"> • Provides safeguards as described in the October 22, 1998 State Medicaid Director letter, Collaborations for Data Sharing between State Medicaid and Health Agencies; • Performs regular audits; and • Supports incident reporting.
SR-241	<p>The Vendor's solution shall verify identity of all users and deny access to invalid users (e.g. Requires unique sign-on (ID and password); Requires authentication of the receiving entity prior to a system-initiated session, such as transmitting responses to eligibility inquiries).</p>
SR-242	<p>The Vendor's solution shall support data integrity through system controls for software program changes and promotion to production.</p>
SR-243	<p>The Vendor's solution shall enforce password policies for length, character requirements, and updates.</p>
SR-244	<p>The Vendor's solution shall support a user security profile to control user access rights to data categories and system functions.</p>
SR-245	<p>The Vendor's solution shall permit authorized users to set and modify user security access profile.</p>
SR-246	<p>The Vendor's solution shall include procedures for accessing necessary electronic Protected Health Information (ePHI) in the event of an emergency and continue protection of ePHI during emergency operations.</p>
SR-247	<p>The Vendor's solution shall provide the ability to support the following:</p> <ol style="list-style-type: none"> (1) Standard: Security management process - Implement policies and procedures to prevent, detect, contain, and correct security violations. (2) Implementation specifications: <ol style="list-style-type: none"> (a) Risk analysis - Conduct an accurate and thorough assessment of the potential risks and vulnerabilities to the confidentiality, integrity, and availability of electronic protected health information (ePHI) held by the covered entity; (b) Risk management - Implement security measures sufficient to reduce risks and vulnerabilities to a reasonable and appropriate level to comply with § 164.306(a); (c) Sanction policy - Apply appropriate sanctions against workforce members who fail to comply with the security policies and procedures of the covered entity; and

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Table: 34 - MECT Access and Delivery Requirements	
Req ID	Requirement
	(d) Information system activity review - Implement procedures to regularly review records of information system activity, such as audit logs, access reports, and security incident tracking reports.
SR-248	The Vendor's solution shall alert appropriate staff authorities of potential violations of privacy safeguards, such as inappropriate access to confidential information.
SR-249	The Vendor's solution shall provide right of access and request for access to individuals to protect PHI in a timely manner and allows it to be included in responses to inquiries and report requests.
SR-250	The Vendor's solution shall contain verification mechanisms that are capable of authenticating authority (as well as identify) for the use or disclosure requested (e.g. Denies general practitioner inquiry for recipient eligibility for mental health services; Permits inquiries on claim status only for claims submitted by the inquiring provider).
SR-251	The Vendor's solution shall support encryption and decryption (or an equivalent alternative protection mechanism) of stored ePHI.
SR-252	The Vendor's solution shall support encryption of ePHI that is being transmitted.
SR-253	The Vendor's solution shall support integrity controls to guarantee that transmitted ePHI is not improperly modified without detection (e.g. provide secure claims transmission).
SR-254	The Vendor's solution shall provide the capability that all system activity can be traced to a specific user or entity.
SR-255	The Vendor's solution shall provide automation to identify and respond to suspected or known security and privacy incidents; mitigate, to the extent practicable, harmful effects of security and privacy incidents that are known to the covered entity or business associate; and document security incidents and their outcomes (e.g. logon attempts that exceed maximum allowed).
SR-256	The Vendor's solution shall log system activity and enable analysts to examine system activity in accordance with audit policies and procedures (e.g. error diagnosis, and performance management) adopted by the Medicaid agency.
SR-257	The Vendor's solution shall support procedures for guarding, monitoring, and detecting malicious software (e.g. viruses, worms, malicious code, etc.).
SR-258	The Vendor's solution shall have the capability to provision access to an authorized user or request.
SR-259	The Vendor's solution shall contain indicators that can be set to restrict distribution of ePHI in situations where it would normally be distributed.
SR-260	The Vendor's solution shall track disclosures of ePHI and provide authorized users access to reports on the disclosures.
SR-261	The Vendor's solution shall have the capability to handle request for amendment and timely action of making amendments ePHI about the individual in a designated record set.

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Table: 34 - MECT Access and Delivery Requirements	
Req ID	Requirement
SR-262	The Vendor shall develop a Contingency Plan for the Vendor's solution that identifies essential missions and business functions and associated contingency requirements. These requirements include recovery objectives, restoration priorities, contingency roles, responsibilities and addresses maintaining essential business functions despite an information system disruption, compromise, or failure. This plan shall be reviewed and updated on a yearly basis.
SR-263	The Vendor's shall have an alternate storage site identified, including necessary agreements to permit the storage and recovery of system backup information and the resumption of system operations for business functions within the period specified. The Vendor establishes alternate telecommunications services including necessary agreements to permit the resumption of information system operations for essential business functions.
SR-264	The Vendor shall provide for the recovery and reconstitution of the information system to a known state after a disruption, compromise, or failure. Recovery of the information system after a failure or other contingency shall be done in a trusted, secure, and verifiable manner.
SR-265	The Vendor's solution shall have standard Access Control specifications to include: <ul style="list-style-type: none"> (i) Assigning a unique name and/or number for identifying and tracking user identity. (ii) Establishing and implementing as needed emergency access procedures for obtaining necessary electronic protected health information (ePHI) during an emergency. (iii) Implementing electronic procedures that terminate an electronic session after a predetermined time of inactivity. (iv) Implementing a mechanism to encrypt and decrypt electronic protected health information.
SR-266	The Vendor's solution shall provide for the ability to have roles and responsibilities of individuals separated through assigned information access authorization as necessary to prevent malevolent activity.
SR-267	The Vendor's solution user account access authorization shall follow the concept of least privilege, allowing users access to only the information that is necessary to accomplish assigned tasks in accordance with business functions.
SR-268	The Vendor's solution shall after fifteen (15) minutes of inactivity, initiate a session lock; the session lock shall remain in place until the user reestablishes access using established identification and authentication procedures.
SR-269	The Vendor shall provide the ability to enforce physical access authorizations for all physical access points (including designated entry/exit points) to the facility where the information system resides (excluding those areas within the facility officially designated as publicly accessible).
SR-270	The Vendor shall maintain a current list of personnel with authorized access to the space where required (e.g. review and approval of access list and authorization credentials at least once every one hundred eighty (180) calendar days, removes personnel from the access list that no longer require access).

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Table: 34 - MECT Access and Delivery Requirements	
Req ID	Requirement
SR-271	The Vendor shall confirm that physical access to information system distribution and transmission lines is controlled within the facility to prevent unauthorized access.
SR-272	The Vendor's solution shall guard against unauthorized access to electronic protected health information that is being transmitted over an electronic communications network.
SR-273	The Vendor shall guarantee that a short-term uninterruptible power supply shall be employed to facilitate an orderly shutdown of the information system in the event of a primary power source loss.
SR-274	The Vendor shall comply with Agency policies and procedures that govern the receipt and removal of hardware and electronic media that contain electronic protected health information (ePHI).
SR-275	The Vendor's solution shall enforce a sufficient level of authentication / identification against fraudulent transmission and imitative communications deceptions by validating the transmission, message, station or individual.
SR-276	The Vendor's solution shall make sure that sensitive data in transit requiring confidentiality protection are encrypted when traversing entity boundaries. For data in transit where the only concern is the protection of integrity, hashing techniques and message authentication codes are used instead of encryption.
SR-277	The Vendor's solution shall use only FIPS Pub 140-2-approved (or higher) encryption algorithms.
SR-278	The Vendor's solution shall update malicious code protection mechanisms (including signature definitions) whenever new releases are available in accordance with IT system configuration management policy and procedures.
SR-279	The Vendor's solution shall maintain reasonable and appropriate administrative, technical, and physical safeguards for protecting ePHI in accordance with the HIPAA Security Rule on a control by control basis as defined by the NIST Cybersecurity Framework and NIST SP 800-53.
SR-280	The Vendor's solution shall support audit controls for hardware, software, and/or procedural mechanisms that record and examine activity in information systems that contain or use electronic protected health information (ePHI).

2) Information Architecture Requirements

Table: 35 - MECT Information Architecture Requirements below, summarizes the MECT Core - Information Architecture Requirements for the EDW Solution.

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Table: 35 - MECT Information Architecture Requirements	
Req ID	Requirement
SR-281	The Vendor solution shall support the implementation of a CDM that depicts the business area high-level data and general relationships for intrastate exchange.
SR-282	The Vendor's solution shall identify relationships between key entities in the Medicaid enterprise.
SR-283	The Vendor solution shall support an intrastate metadata repository where the Agency defines the data entities, attributes, data models, and relationships sufficiently to convey the overall meaning and use of Medicaid data and information.
SR-284	The Vendor solution shall support statewide standard data definitions, data semantics, and harmonization strategies.
SR-285	The Vendor's solution shall update all historical claim data, recipient enrollment, provider enrollment, and other primary reference data on a scheduled basis.
SR-286	The Vendor's solution shall, at a minimum, support transfer of data from MMIS and to other entities (e.g. claims history, recipient enrollment, provider enrollment, and primary reference data information such as diagnosis, procedure, national drug code [NDC], and pricing).
SR-287	The Vendor's solution shall support consumption of data in multiple formats from many sources, such as the Social Security Administration (SSA), vital statistics, health plan encounter data, benefit manager encounter data (e.g. pharmacy, dental, mental health), waiver program data, and census bureau.
SR-288	The Vendor's solution shall require, capture, and maintain the 10-digit national provider identifier (NPI).
SR-289	The Vendor's solution shall accept the national provider identifier (NPI) in all standard electronic transactions mandated under HIPAA.
SR-290	The Vendor's solution shall not allow atypical providers to be assigned numbers that duplicate any number assigned by the National Plan and Provider Enumeration System (NPPES).
SR-291	The Vendor's solution shall support the production of a random sample of data that would be needed for audit purposes (e.g. providers, beneficiaries, claims, etc.) based on the State-established selection criteria.
SR-292	The Vendor's solution shall maintain all HIPAA-required data sets (e.g. ICD-10, NDC), including those defined by the HIPAA implementation guides to support all transactions required under HIPAA administrative simplification rule (e.g. gender, reason code).
SR-293	The Vendor's solution shall support the sending and receiving of electronic claims transactions, containing valid codes, required by 45 CFR Parts 160 and 162, as follows: <ul style="list-style-type: none"> • Retail pharmacy drug claims (NCPDP); and • Dental health care claims (X12N 837D)
SR-294	The Vendor's solution shall comply with the Agency's standardized structure and vocabulary data for automated electronic intrastate interchanges and interoperability.

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Table: 35 - MECT Information Architecture Requirements	
Req ID	Requirement
SR-295	The Vendor's solution shall accept, record, store, and retrieve documents (free-form or in HIPAA attachment format) submitted with or about claim submission activity, and auto-archives or forwards to appropriate operational area for processing.
SR-296	The Vendor's solution shall associate clinical data (e.g. claims attachment) with the claim record.
SR-297	The Vendor's solution shall maintain synchronization of claims and encounter record dates with provider and member record dates (i.e. a claim or encounter is always linked to the provider status and member status segments associated with the date of service).
SR-298	The Vendor's Logical Data Model (LDM) supports identification of data classes, attributes, relationships, standards, and code sets for intrastate exchange.
SR-299	The Vendor's solution shall maintain providers' data (e.g. links from providers to other entities, such as groups, Health Plans, chains, networks, ownerships, and partnerships).
SR-300	The Vendor's solution shall conform to ASC X12 Technical Reports Type 3 (TR3), Version 005010.
SR-301	The Vendor's shall verify and support that all Vendor systems which use numeric data fields are defined and coded as numeric data only.
SR-302	The Vendor's solution shall support the adoption of Council for Affordable Quality Healthcare's CAQH CORE® Phase I, II and III as stipulated in 45 CFR 162 (Operating Rules for HIPAA Transactions).
SR-303	The Vendor's shall verify and support that all Vendor systems which use alphabetic data fields are defined and coded as alphabetic data only.

3) Integration and Utility Requirements

Table: 36 - MECT Integration and Utility Requirements below, summarizes the MECT Core - Integration and Utility Requirements for the EDW Solution.

Table: 36 - MECT Integration and Utility Requirements	
Req ID	Requirement
SR-304	The Vendor's solution shall use technology-neutral interfaces that localize and minimize impact of new technology or module implementation.
SR-305	The Vendor's solution shall provide online access to four (4) years of selected management reports and online access to five (5) years of annual reports.
SR-306	The Vendor's solution shall conduct information exchange (internally and externally) using MITA Framework, industry standards, and other nationally recognized standards.

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Table: 36 - MECT Integration and Utility Requirements	
Req ID	Requirement
SR-307	The Vendor's solution shall develop data models that include mapping of information exchange with external organizations.
SR-308	The Vendor's solution shall apply single source of information methodologies.
SR-309	The Vendor's solution shall allow authorized users to have access to user activity history and other management functions, including log-on approvals/disapprovals and log search and playback.

4) Intermediary and Interfaces Requirements

Table: 37 - MECT Intermediary and Interfaces Requirements below, summarizes MECT Core - Intermediary and Interfaces Requirements for the EDW Solution.

Table: 37 - MECT Intermediary and Interfaces Requirements	
Req ID	Requirement
SR-310	The Vendor's solution shall use Enterprise Content Management (ECM) services for entry of different forms of information content.
SR-311	The Vendor's solution shall use automated business processes.
SR-312	The Vendor's solution shall perform intrusion detection monitoring and route system alerts and alarms when the system detects unusual conditions.
SR-313	The Vendor shall document all interfaces in an Interface Control Document (ICD), along with how those interfaces are maintained.

5) Standards and Conditions Requirements

Table: 38 - MECT Standards and Conditions Requirements below, summarizes MECT Core - Standards and Conditions Requirements for the EDW Solution.

Table: 38 - MECT Standards and Conditions Requirements	
Req ID	Requirement
SR-314	The Vendor's solution shall support the use of medical code set for coding diseases, signs and symptoms, abnormal findings, and external causes of injuries/diseases, as stipulated in 45 CFR Part 162.1002.
SR-315	The Vendor's solution shall support the Clinical Modification (ICD-10 CM) for diagnosis coding (including the Official ICD-10 CM Guidelines for Coding and Reporting), and, the Procedure Coding System (ICD-10 PCS) for inpatient hospital procedure coding (including the Official ICD-10 PCS Guidelines for Coding and Reporting).

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Table: 38 - MECT Standards and Conditions Requirements	
Req ID	Requirement
SR-316	The Vendor's architecture shall preserve the ability to efficiently, effectively, and appropriately exchange data with other participants in the health and human services enterprise.
SR-317	The Vendor's solution shall support the identification and adoption of transition and retirement plans.
SR-318	The Vendor's solution can be transferred without major system design.
SR-319	The Vendor's design documents shall use a widely supported modeling language (e.g. UML: Unified Modelling Language, Business Process Modeling and Notation (BPMN)).
SR-320	The Vendor's solution shall support open standards between key interfaces have been considered for all and chosen where feasible.
SR-321	The Vendor's solution shall be verified through extensive testing that demonstrates compliance with chosen interface standards and specifications.

6. Other Project Services

a. Data Management Framework Services Requirements

The Vendor shall provide services to support the data management framework.

Table: 39 - Data Management Framework Responsibilities below, indicates the primary vendor responsible for each aspect of the data management framework.

Table: 39 - Data Management Framework Responsibilities	
<i>Data Management Area</i>	<i>Primary Vendor</i>
Goals and Guiding Principles	SEAS
Master Data Management	IS/IP
Data Quality	EDW
Enterprise Metadata Management	EDW
Conceptual/Logical Data Modeling	SEAS
Physical Data Modeling	EDW
Federated Hybrid Model	EDW
Business Intelligence and Reporting	EDW
Data Services and Integration	EDW & IS/IP
Data Conversion	EDW
Data Governance	SEAS
Data Standards	SEAS

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Table: 39 - Data Management Framework Responsibilities	
<i>Data Management Area</i>	<i>Primary Vendor</i>
Common Data Architecture	EDW & IS/IP
Data Sharing Architecture	IS/IP

b. Application Data Migration to ODS

The EDW Vendor is responsible for migration of application data in Agency and external systems to use data services that access the Operational Data Store.

7. Project Artifact Requirements

This section describes the expected artifacts (e.g. work products) produced by FX Projects performed under this Contract. An artifact is a tangible, standalone output that results from Vendor services. The artifacts listed are defined in the FXPLC. Use of FXPLC/XLC based artifact names and templates allow the Vendor to reuse artifacts from other states and likewise allow other states to reuse artifacts developed under this Contract.

Deliverables are a special type of artifact that are frequently the basis for payment and are often more formal and rigorously reviewed. **Section B.3.F.7.** lists and describes artifacts that are contractual project deliverables.

Vendors are encouraged to propose additions and changes to the artifacts produced by FX Projects performed under this Contract.

a. System Documentation and User Documentation

1) Documentation Formatting:

All documentation shall follow Agency standards per **Section B.3.F.8.a. Deliverable Management**, be formatted to be human readable/plain English, and the format shall be approved by the Agency.

2) Vendor Operational Functions:

The Vendor shall create and update system documentation for the operational functions including narratives and flows, user manuals; desk level procedures; and the technical documentation necessary to describe and communicate the solution and services.

As part of the **Training Plan (PD-18: Organizational Change Management Plan)**, the Vendor shall include desk level procedures for maintaining documentation for each functional area, screen layouts, report layouts, and other output definitions, including examples and content definitions. Documentation shall include user manuals, business rules, and all other documentation appropriate to the platform, operating systems, and programming languages.

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- 3) Technical Components:
- a) The Vendor shall provide easy, navigable access to system documentation at the functional-area level, providing comprehensive, searchable documentation in user-friendly, exportable, and printable format which is approved by the Agency. The documentation shall be understandable by users at various skill levels; and provide authorized users with easy, up-to-date system documentation, metadata, policies and procedures, and user documentation related to the data maintained by the Vendor including data, tools, routines, program code, and schemas;
 - b) The Vendor shall include an overview, including system narrative, system flow, and a description of the operating environment, and draft technical documentation;
 - c) As part of **PD-9: System Design Document**, the Vendor shall provide and maintain a current, accessible, searchable, online Data Dictionary which clearly defines fields, field locations, tables, reports, data relationships, and formulas.
 - d) The Vendor shall develop and maintain **PD-9: System Design Document** documentation to include Business Architecture, Business Process, Information Architecture, and Technical Architecture to support MITA Maturity goals;
 - e) As part of **PD-19: Operations and Maintenance Manual**, the Vendor shall include operational procedures, a facsimile or reproduction, and a narrative description of each report, with a definition of all report fields, data source, and any calculations contained within the report for components of the EDW Solution;
 - f) The Vendor shall provide a listing of the edits and audits applied to each input item and the corresponding plain English, non-technical description of the error messages; and
 - g) The Vendor shall update the System Documentation and User Documentation for each EDW system component, in accordance with the **Statewide Medicaid Managed Care (SMMC) Style Guide**, located in the [EDW Procurement Library](#).

b. List of FX Project Artifacts

The project artifact list is available in the **Design and Implementation Management Standards**, located in the [EDW Procurement Library](#). The list provides potential artifacts from the FX Project Life Cycle that may be applicable to FX Projects performed under this Contract. In addition to the provided list of project artifacts, the EDW Vendor shall identify, develop, and submit other relevant artifact types as applicable for FX Projects performed under this Contract.

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Note: Deliverables as listed in the **List of Payment Deliverables** are special types of Project artifacts that have payment, financial consequences, and formal review and approval.

8. Deliverable Requirements

The EDW Vendor shall provide the final draft deliverables for the artifacts as described below and in **Attachment B, Exhibit B-1: Deliverables and Performance Standards**, to the Agency's Contract Manager by the dates indicated. The Agency reserves the right to request modification of the deliverables, as deemed necessary by the Agency, before their approval. Deliverable due dates may be modified, if approved in writing, in advance by the Agency. Additional deliverables may be added by contract amendment if the Agency should determine that such additional deliverables are required to achieve the objectives of the executed contract.

Deliverables are specific outputs the Vendor shall create as part of the EDW Contract and throughout the life of the project. A work product is a report, diagram, or collection of documents used by the Vendor which may or may not become a deliverable. The Vendor shall use work products to help create project deliverables. Additionally, an approved deliverable has payment directly connected to it on its associated invoice; a work product does not. Components for work products shall be determined during the Design and Development phases. Expectations for which life cycle artifacts are required will be determined early in the Project Initiation Phase when the Project Process Agreement is executed.

a. Deliverable Management

The Vendor shall comply with **FX Deliverable Management Standards** and **FX Technology Standards** for all deliverables. **FX Deliverable Management Standards** are defined in **FX Project Management Standards** document. The **FX Project Management Standards** and **Technology Standards** are located in the [EDW Procurement Library](#).

- 1) To verify effective performance of EDW Project deliverables and to minimize Agency review and Vendor revision times, the Vendor shall perform deliverable management for each deliverable in accordance with **Section B.3.F.7.b.** and **Section B.3.F.7.c.** for each Deliverable and Due Date, and for deliverables produced under task orders as described in **Section B.4.B.**
- 2) The Vendor shall develop and submit a Deliverable Expectation Document (DED), to include the Vendor's proposed format and content, within thirty (30) calendar days of the Agency's approval to commence work on the deliverable. The Vendor shall conduct walk-throughs of the DED with the Agency, unless otherwise directed by the Agency.
- 3) The Agency will establish Agency deliverable review timeframes and Vendor revision timeframes customized for each deliverable. The Vendor revisions shall use the Microsoft Office track changes and comments features, if available in the approved format, and shall use version control numbering of documents and include an amendment history chart in each document.
- 4) In addition to specific deliverable requirements, all deliverables are subject to the following approval criteria: