Appendix C
4119Z1

State of Nebraska
Department of Insurance

Request for Proposal
Technical Requirements Matrix

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1. INTRODUCTION

This document provides matrices of technical requirements for the Nebraska Department of Insurance Health Insurance Exchange Solution (Exchange).

2. BIDDER INSTRUCTIONS

Requirement Matrix

Bidders are required to provide a response, using the appropriate codes provided in the tables below, for each requirements listed in this Requirements Response Matrix. Scoring for each requirement will directly relate to the ability code indicated by the bidder.

Ability Code	Condition	Description
S	Standard Function	The proposed system fully satisfies the requirement as stated. The vendor must explain how the requirement is satisfied by the system.
W	Workflow or System Configuration Required	Current functionality of the proposed system exists in the system and can be modified by a system administrator to meet this requirement.
M	Modification Required	The proposed system requires a modification to existing functionality to meet this requirement which requires a source code modification. The system will be modified to satisfy the requirements as stated or in a different format. The vendor must explain the modifications and include the cost of all modifications above and beyond the base cost in the ***Project Cost Proposal***.
F	Planned for Future Release	This functionality is planned for a future release. The vendor must explain how the requirement will be satisfied by the system and when the release will be available.
C	Custom Design and Development	The proposed system requires new functionality to meet this requirement which requires a source code addition. The vendor must explain the feature and its value, and include any cost above and beyond the base cost in the ***Project Cost Proposal.***
N	Cannot Meet Requirement	The proposed system will not satisfy the requirement. The vendor must explain why the requirement cannot be satisfied.
O	Other Software	If the requirement is to be satisfied through the use of a separate software package(s), vendors must identify those package(s) and describe how the functionality is integrated into the base system.

3. GENERAL REQUIREMENTS

General Technical Requirements

#	General Technical Requirements	Required / Desirable	Bidding Ability Code	Proposed Solution/ Comments
3.1	The Exchange system must be able to interface with multiple state systems as well as external trading partners' systems to allow interoperability as appropriate with outside entities and state agencies as the Exchanges requires. (Real-time, near-time, batch)	R		
3.2	The solution must support multiple deployment environments, including development, test, training, and production. (sandbox, break-fix)	R		
3.3	The solution should provide tools or utilities to support the transfer of user, rules, and configuration data between environments, including the enforcement of a strictly defined methodology for movement from development to Quality Assurance (QA) and production and the ability to rollback to previous a version.	D		
3.4	The solution must conform to Nebraska Information Technology Commission (NITC) Standards and Guidelines (http://www.nitc.ne.gov/standards/), particularly those related to technology access, state government websites, and security architecture.	R		
3.5	The system must take a table-driven approach to application configuration and provide online administrative screens for setting and managing system configuration.	R		
3.6	The system shall meet the Service Level Agreements (SLAs) and other performance standards set by the State.	R		
3.7	The solution shall be designed and developed using a component-based architecture that is modifiable and reusable.	R		
3.8	The solution should be designed, built and deployed with Enterprise Architecture best practices.	D		
3.9	"The solution must conform to Technology Framework included in this RFP as Appendix D."	R		
3.91	The solution must provide event and incident notification capabilities which can integrate with industry standard system management frameworks such as those provided by CA, IBM and Microsoft."	R		

#	General Technical Requirements	Required / Desirable	Bidding Ability Code	Proposed Solution/ Comments
3.92	The solution should provide the following testing functions: • Functional Testing • Regression Testing • Load & Performance Testing • Test case creation and tracking • Test data generation (i.e. data masking, data filtering, etc.)"	D		
3.93	The solution must have the capability to capture and report on system utilization needed to allocate costs down to the user and transaction level.	R		
3.94	The solution should be able to support the following multi-agency configurations: • Two or more independent yet integrated Agencies in a single instance of the business application running on a single instance of the technical infrastructure • Two or more independent yet integrated Agencies each with a separate instance of the business application which all run on the same instance of the technical infrastructure • Two or more independent, yet integrated, Agencies each with a separate instances of the business application which run on separate instances of the technical infrastructure.	D		
3.95	All performance and systems management functions must be able to operate without degrading business systems response time.	R		

4. ARCHITECTURE

The table below lays out the architectural requirements for the system or systems that will comprise the Exchange IT solution.

Architecture Requirements

#	Architecture Technical Requirements	Required / Desirable	Bidding Ability Code	Proposed Solution/Comments
4.1	The solution must follow a modular, flexible approach to systems development consistent with the MITA 3.0 guidelines, the CMS Exchange Reference Architecture, and Service-Oriented Architecture (SOA) design principles.	R		
4.2	The Exchange systems must follow an n-tiered (layered) architectural approach in which presentation, business logic, and data access are separated.	R		
4.3	The system must be deployable to servers running one of the following operating systems: • AS/400 • Linux • Unix • Windows • z/OS	R		
4.4	The system must support deployment on virtualized servers to support scalability and flexibility.	R		
4.5	All infrastructure software used by the system (operating system, databases, web servers, network management, etc.) must be a version that is currently supported under standard maintenance agreements and is generally available during the life of the contract.	R		
4.6	The Exchange solution must incorporate a and externalized rules repository and engine that allows business rules (including, but not limited to eligibility rules, program determination rules, rate calculations, and application validation rules) to be separated from application logic and defined and maintained through graphical user interfaces or other non-programmatic means.	R		

#	Architecture Technical Requirements	Required / Desirable	Bidding Ability Code	**Proposed Solution/Comments**
4.7	Business rules must be expressed using a consistent, technology-neutral standard format that is human-readable.	R		
4.8	The Exchange system must make the centralized rules engine available in a shared services model to be accessed by other State systems.	R		
4.9	The rules engine must be scalable and flexible to allow it to support eligibility and enrollment rules for additional (i.e. non-Exchange) programs in the future.	R		
4.10	The solution must use an enterprise workflow engine to support the routing of work items, work queues, etc.	R		
4.11	The solution must leverage an electronic document management system, integrated with the workflow engine, to support the storage and retrieval of document images (i.e., those received on paper and scanned as well as those received electronically) associated with member and employer accounts and eligibility and enrollment processes.	R		
4.12	The Exchange solution should leverage an enterprise content management system to store digital content, downloadable forms, and personalizable on-screen content.	D		
4.13	The Exchange solution must be implemented using an industry-standard commercial Relational Database Management System (RDBMS), Application Server, and Web Server infrastructure.	R		
4.14	All transactional system databases must use data models, referential integrity, constraints, stored procedures, and other DB specific functions to ensure data is properly formatted and orphaned records are not allowed in the system	R		
4.15	The Exchange solution must support a multi-tiered network deployment model that allows some physical tiers (e.g. load balancers, web servers) to be deployed in one network zone and other tiers (e.g. application servers, databases) to be secured behind internal firewalls	R		

#	Architecture Technical Requirements	Required / Desirable	Bidding Ability Code	Proposed Solution/Comments
4.16	The Exchange solution must employ an Enterprise Service Bus (ESB) that serves as the integration backbone and the broker between service consumers and producers.	R		
4.17	The solution should provide a business process layer that orchestrates executable business processes via the ESB, including reusable business services such as encryption, compression, validation, and dynamic routing.	D		
4.18	The system should support multi-node application server processing so that application processing load can be distributed and balanced across multiple physical servers.	D		
4.19	The system architecture must ensure that reporting and batch processing does not interfere with general system responsiveness or availability.	R		
4.20	The system shall assure that third party software for ancillary aspects of solution that require distribution or maintenance to remote desktops or servers shall be capable of being distributed and configured on customer from a central site and not require onsite intervention. In other words software shall support “silent" or unattended installation functionality for any non- web based features.	R		
4.21	The system workflow of web pages and program functions should be configurable and modifiable without changing program code.	D		

5. PORTAL DESIGN & ACCESSIBILITY

Portal Design and Accessibility Requirements

#	Portal Design and Accessibility Requirements Technical Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
5.1	The Exchange portal must meet or exceed the level of usability and information architecture provided in the Enroll 2014 UX Design Reference Prototype.	R		
5.2	The portal must support multiple languages, including English and Spanish, and provide number for translation services	R		
5.3	All publicly-accessible portal interfaces must support small form-factor devices, including the following mobile phone and tablet platforms: • iOS phones and tablets • Android phones and tablets • Blackberry phones and tablets • Windows mobile phones and tablets	R		
5.4	The portal must support commonly used Internet browsers without any degradation in functionality, including the following: • Internet Explorer Version 8.0 or greater • Mozilla Firefox Version 6 or greater • Google Chrome Version 20 or greater • Apple Safari version 5.1 or greater • Opera Browsers 10 or greater	R		
5.5	The portal must be 100% accessible via the Internet and require no desktop software (including specialized plug-ins and applets) except for the commercially-available web browsers listed above.	R		
5.6	The solution must meet all American with Disabilities Act (ADA) and Limited English Proficiency (LEP) requirements as required by the ACA and Federal regulations.	R		

#	Portal Design and Accessibility Requirements Technical Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
5.7	The portal must be compliant with Section 508 of the Federal Rehabilitation Act and the World Wide Web Consortium (W3C) Web Accessibility Initiative, Section 508, (a)(1)(A) .	R		
5.8	The portal must allow consumers to submit applications and attestations electronically with an electronic signature that complies with State, Federal, and agency requirements and standards.	R		
5.9	The portal must provide field-level validation and user-friendly error messages via online help to ensure all required data is fully populated before the user is allow to proceed to subsequent screens.	**R**		
6.0	Capability to support site management capabilities, such as rollback and versioning capabilities to simplify moving portals through the life cycle.	R		
6.1	Capability to enforce Section 508 and W3C compliance and provide auditable results of findings.	R		
6.2	Capability to support AJAX controls.	D		
6.3	Capability to support WebDAV.	D		
6.4	Capabilities to create, manage, and publish content for both print and online documentation.	R		
6.5	Capability of using XML (extensible markup language) and CSS (cascading style sheets).	D		
6.6	Capability to integrate with the IDE source control capability.	R		
6.7	The system shall provide the ability for field level help, including but not limited to policy, data entry, etc.	R		
6.8	The system shall have a user interface that conforms to W3C recommendations and standards which shall be validated through the W3C Markup Validation Service (http://validator.w3.org/)	R		
6.9	The system shall provide web analytics.	R		
7.0	The system shall apply rules capable of validating field level information.	R		
7.1	The system shall notify entity submitting data when the data does not meet validation requirements	R		

#	Portal Design and Accessibility Requirements Technical Requirements	Required / Desirable	Billing Ability Code	**Proposed Solution/Comments**
7.2	The system should support online help documentation which is context sensitive and allows the users to obtain self-training on how to use the application and receive program information as appropriate.	D		

Security

The table below lays out the technical requirement for security that must be met by the Exchange IT systems.

6. SECURITY REQUIREMENTS

#	**Security Requirements Technical Requirements**	**Required / Desirable**	**Billing Ability Code**	**Proposed Solution/Comments**
6.1	The Exchange solution must allow the implementation, management and monitoring of the following security and compliance policies: • Health Insurance Portability and Accountability Act (HIPAA) • Health Information Technology for Economic and Clinical Health Act (HITECH) of 1996 • Privacy Act of 1974 • Patient Protection and Affordable Care Act (ACA) of 2010, Section 1561 Recommendations • Safeguarding and Protecting Tax Returns and Return Information (26 U. S, C. 6130 and related provisions) • Nebraska Information Technology Commission (NITC) Standards and Guidelines (http://www.nitc.ne.gov/standards/)	R		
6.2	The Exchange systems should follow the guidance provided in CMS's *Harmonized Security and Privacy Framework – Exchange TRA Supplement*.	D		

#	Security Requirements Technical Requirements	Required / Desirable	Billing Ability Code	**Proposed Solution/Comments**
6.3	The Exchange solution must implement a security architecture based on MITA 3.0 Security and Privacy model, including the following security architectural elements: • Multi-Level Security • Identity Management • Role Based Access Control (RBAC) • Decentralized Label Model (DLM)	R		
6.4	The solution must manage user profiles, including enforcing role-based security access to system data and functions.	R		
6.5	The system must support a defense-in-depth, multi-zone computing architecture that physically separates the layers between the System components. Each layer must be protected by firewalls and appropriate security devices based on the sensitivity of data it houses and functions it performs.	R		
6.6	The system must be built upon an infrastructure that protects against the known forms of exploits and attacks, including SQL injection, code injection, cross-site scripting, request forgery, and session fixation.	R		
6.7	The system must allow users to recover/reset lost passwords from a web portal interface.	R		
6.8	The system must enforce strong password rules per NITC requirements.	R		
6.9	The system must support the ability to disable user accounts and ensure no disabled accounts can log in or access the system.	R		
6.10	The system must support the automatic disabling of user accounts if failed logins exceed a configurable threshold.	R		
6.11	The system must automatically logoff authenticated users after a configurable period of inactivity and display a warning message to the user prior to session timeout.	R		
6.12	The system should support the saving of user profiles for archival purposes, including the ability to re-enable/reuse the profile.	D		

#	Security Requirements Technical Requirements	Required / Desirable	Billing Ability Code	**Proposed Solution/Comments**
6.13	The system must pass credentials for authentication and authorization from the Exchange solution to authenticate system access to web service transactions (that is, connect to external web systems in the context of a named user, not super-user, account).	R		
6.14	The solution must provide the same security provisions for the all environment as those used in the production environment.	R		
6.15	The solution must provide intrusion detection and prevention services for all externally-accessible servers.	R		
6.16	The solution shall support user account authentication procedures with configurable parameters (time, cipher strength, logon attempts, etc.).	R		
6.17	The solution should generate automatic alerts to system administrators when a breach pattern or unauthorized use activity is detected.	D		
6.18	The solution should support, issue, and manage public key certificates for secure transactions, following standard practices such as the use of accepted Certification Authorities (CA), documented Certificate Policies (CP), and Certificate Practice Statements (CPS), including key escrow strategy. Implementation should use fundamental technical standards such as X.509 certificate format and Public Cryptographic Standards (PKCS).	D		
6.19	The solution must implement appropriate encryption mechanisms to protect the confidentiality and integrity of critical types of data, including but not limited to passwords, social security numbers, and credit card and bank account numbers.	R		
6.20	All sensitive data must be encrypted in transit (including emails) to protect data confidentiality and integrity as appropriate based on the sensitivity of data.	R		

#	Security Requirements Technical Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
6.21	All servers or server storage devices containing PHI or PII must have sufficient administrative, physical, and technical controls in place to protect that data, based upon a risk assessment/system security review.	R		
6.22	The solution must meet the hosting and handling standards defined by the Payment Card Industry Data Security Standards (PCI DSS) Version 2.0 for managing credit card information, including the encryption of credit card numbers and the masking of card numbers on user interfaces.	R		
6.23	The solution must meet all rules and security policies defined by the National Automated Clearing House (NACHA) for processing ACH transactions	R		
6.24	The solution must provide the ability to implement security for transport and messaging via web services.	R		
6.25	If a system component or application fails, the system must not leave sensitive data accessible, and it should return user-friendly error messages that do not expose internal system details and does not include information that might help an attacker exploit vulnerabilities in the application.	R		
6.26	The system must support the use of SAML (preferably SAML 1.0, 1.1, and 2.0) for inbound single sign-on (SSO).	R		
6.27	Capability to support strong authentication through SSL, Kerberos, RADIUS, SAML, XACML, and OpenID.	D		
6.28	Capability to use single sign on tools.	D		
6.29	Capability to support robust session management controls, including the ability to limit the number of concurrent sessions for an individual user.	R		
6.30	The system shall provide the ability to virus scan uploaded files using Agency approved virus scanning software.	R		
6.31	The system shall ensure transactions and messages are accurately received as they were sent and information is not altered by non- authorized individuals.	R		

#	Security Requirements Technical Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
6.32	The system should provide the ability to administer user security based on organizational unit.	D		
6.33	The system shall support the latest version of Secure Sockets Layer (SSL)/Transport Layer Security.	R		
6.34	The system shall support the latest version of the Secure Shell (SSH).	R		
6.35	The system shall support the latest version of the IP Protocol Security extension (IPSec).	R		
6.36	The system shall support S/MIME for email communications.	R		
6.37	The system should support at a minimum 256-bit cryptography.	D		
6.38	The system should prevent the creation of duplicate user accounts.	D		
6.39	The system shall have the ability to adhere to NIST guidelines at: http://csrc.nist.gov/index.html • NIST 800-53 version 2 Recommended Security Controls for Federal Information Systems – Information Security • NIST 800-44 version 2 Guidelines on Security Public Web Servers • NIST 800-77 Security Configuration Checklist Program for IT Products – Guidance for checklist Users and Developers.	R		
6.40	The system must be able to use HTTPS/SSL for connections between interfaces.	R		
6.41	The system should use file encryption for data transfer between agencies.	D		
6.42	The system should pass vulnerability tests that are deemed industry standard for an application which hosts confidential information of clients like Social Security Numbers, dates of birth, addresses etc.	D		

#	Security Requirements Technical Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
6.43	The system should pass tests for common web vulnerabilities such as poor session controls, injection flaws, denial of service, un-validated input, and cross site scripting.	D		
6.44	The system shall have the ability to comply with system security requirements and pass a self-assessment based on data classifications: • United States Department of Agriculture (USDA) Food & Nutrition Services (FNS), (i.e. FNS Handbook 901 System Security) • Internal Revenue Service (IRS), (i.e. Publication 1075 Safeguards for protecting Federal Tax Returns and Return Information) • Social Security Administration (SSA) • Department of Health and Human Services (DHHS) • Center for Medicare & Medicaid Services (CMS) • DHHS Administration for Children & Families (ACF) and Health Insurance Portability and Accountability Act (HIPAA)	R		
6.45	The system should provide the ability to create, display and maintain an administrative structure as specified by the State.	D		
6.46	The system shall provide the ability to include a viewable online history of all changes made by User Account Managers as specified by the State.	R		

7. MAINTENANCE, DISASTER RECOVERY, AND BUSINESS CONTINUITY

Maintenance, Disaster Recovery, and Business Continuity Requirements

#	Maintenance, Disaster Recovery, and Business Continuity Technical Requirements	Required/ Desirable	Billing Ability Code	Proposed Solution/Comments
7.1	The system must include full redundancy at all physical layers, including network (routers, load balancers), web servers, application servers, and database servers.	R		
7.2	The system must provide the capability to be backed up to a remote site that is separate and distinct from primary hosting facility within the Recovery Time Objective (RTO) defined by the Exchange.	R		
7.3	The system must support the recovery of lost or deleted data from backup in accordance with the Recovery Point Objective (RPO) as defined by the Exchange.	R		
7.4	All system errors and exceptions must be written to a central error log or repository and be accessible to support system maintenance and troubleshooting.	R		
7.5	The system must trap and record exceptions caused by resource failures, such as out-of-memory or connection timeouts.	R		
7.6	The solution must include job scheduling tools (internal or third-party) to automate administrative tasks such as database backups.	R		
7.7	The system must be built upon an infrastructure that is easily upgradable through patches and point releases, including the upgrading of the Exchange software and all prerequisite infrastructure software and the application of data migration or update scripts.	R		
7.8	The system must be maintainable within a standard planned maintenance window.	R		
7.9	The system must support the posting of planned downtime notices and a maintenance model where all system access is denied to non-administrator users.	**R**		

8. INTEGRATION

The Exchange systems will have to integrate with numerous external systems and entities, including those belonging to the CMS, NE-DHHS, insurers, and insurance brokers. The actual processing requirements for data exchange are treated as business and functional requirements within the Data Exchange business area. The requirements below detail the technical specifications that must be met by the IT systems to accomplish the integration tasks defined in the business requirements

Integration Requirements

#	Integration Technical Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
8.1	The system must provide real-time interfaces to transfer data between the Exchange solution and other systems, such as existing state systems, including NE-DHHS Medicaid enrollment data (real-time exception) and the SERFF Plan Management System, and federal systems, such as HIOS and the Federal Data Services Hub.	R		
8.2	The solution must support file-based batch transfer and interfaces, such as enrollment and billing data between the Exchange and third parties (e.g. insurance carriers, CMS membership systems, etc.).	R		
8.3	The system must be able to produce both full and transactional enrollment files in the X.12 HIPAA 834-5010 format.	R		
8.4	The system should use a third-party HIPAA validator to verify files extracted and received are in valid 834 format prior to transmission or processing.	D		
8.5	The system must expose a web service that allows external parties (including NE-DHHS/Medicaid and Insurers) to submit requests for example verify an individual's enrollment in a Qualified Health Plan	R		

#	Integration Technical Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
8.6	The solution should support real-time service-based exchange of enrollment and billing data between the Exchange and 3rd parties (e.g. insurance carriers, agents or brokers).	D		
8.7	The Exchange solution must include a data exchange layer that eliminates the need for hardwired point-to-point integrations.	R		
8.8	All web services exposed by the Exchange systems must conform to the "WS-*" set of web services standards, including WSDL, SOAP over HTTPS, UDDI, and WS-Security.	R		
8.9	All web services by the Exchange systems must be reusable as enterprise resources by systems external to the Exchange	R		
8.10	The services and consumers employed in the Exchange systems must be loosely-coupled to ensure service logic can evolve while guaranteeing backwards compatibility to existing consumers.	R		
8.11	The solution must include a service management layer that provides the following: A. A registry/repository in which all services related to the Exchange systems can be published. This registry must support Universal Description Discovery and Integration (UDDI) and the Web Services Description Language (WSDL) B. Service monitoring, logging, and audit C. Must be open to others and reuseable by other systems and agencies	R		
8.12	The data exchange infrastructure should support synchronous and asynchronous messaging subscription and publication.	D		
8.13	The data exchange infrastructure should support multiple open standards and industry standard protocols, including Secure FTP (S-FTP), SOAP over HTTPS, and JMS/ MQ messages.	D		

#	Integration Technical Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
8.14	The Exchange solution should provide common bi-direction interfaces (preferably, a web service API) that will support the integration with Computer Telephone Integration (CTI) systems for purposes such as retrieving caller information and triggering screen pops.	D		
8.15	The system shall provide the ability to report on interface transmissions (e.g., total number of records loaded, date of interface transmission, amount of time to execute the interface transmission, errors, and failures).	R		
8.16	The system should have the capability to interact with the legacy system during a 8.15phased in implementation to allow for all functionality of the old and new systems to be available.	D		
8.17	The system should provide the ability to import data into the system in multiple formats (e.g., csv, fixed length ASCII, tab-delimited).	D		

9. AUDIT, REPORTING, & DATA MANAGEMENT

Audit, Reporting and Data Management Requirements

#	Audit, Reporting and Data Management Technical Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
9.1	The system must create and retain an audit log tracking all successful and unsuccessful logins.	R		
9.2	The system must have the ability to provide reports on users, security groups, roles, settings, including login statistics.	R		

#	Audit, Reporting and Data Management Technical Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
9.3	The system must maintain an audit log of all transactions related to eligibility, enrollment, invoice, and payment, including user- and system-initiated actions and capturing the user, date/time, and before/after values of data affected by the transaction.	R		
9.4	The System must capture and retain the data that was used to determine eligibility, calculate benefits, and generate various outputs, including payments, notices, and electronic benefits, at the point in time that the particular action took place. Subsequent changes to data elements (e.g. an applicant's income) should not over-write the value that used to make a determination at a particular point in the past.	R		
9.5	The system must support the storing of the history of key data elements, including but not limited to member name, demographics, address, Social Security Number, income, and enrollment details and employer company information and provide a means of viewing changes to this data over time.	R		
9.6	The underlying data stores in the Exchange solution must support read-only connections via open standard (e.g. ODBC, SQL) for the purposes of querying data and extracting data to reporting repositories.	R		
9.7	The reporting subsystem must provide safeguards that prevent users from executing reports and/or long-running queries that cause locks, timeouts, or other degradations of system performance.	R		
9.8	The system should provide a flexible framework that allows the import and export of data using industry standard file transmission protocols.	D		
9.9	The solution should include the infrastructure (e.g. via the ESB and business process layer) needed to support effective Business Activity Monitoring and Reporting of various business performance metrics, and the information reports necessary to allocate costs based on usage.	D		

#	Audit, Reporting and Data Management Technical Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
9.10	The data warehouse must use a schema such as star- or snow-flake or similar dimensional data model design to enable high-performance reporting across large data sets.	R		
9.11	The data warehouse should pre-aggregate data in cubes or similar OLAP structures to support rapid, interactive summary analysis across large data sets.	D		
9.12	A set of Extract, Transform, and Load (ETL) jobs must execute on a customer defined schedule (i.e. nightly and/or weekly) to populate the warehouse with data from the core Exchange management systems.	R		
9.13	The data warehouse must be backed up on a nightly basis in advance of being updated by the nightly ETL jobs.	R		
9.14	The ETL process must support rollback and/or reload functions when a batch job fails due to errors.	R		
9.15	The ETL process should include advanced index management to speed load time and ensure properly distributed indexes after a large data load.	D		
9.16	The ETL process should leverage third-party data quality and master data management tools for identifying duplicate records, cleansing data, and validating key data elements such as addresses, social security numbers, phone numbers, and email addresses.	D		
9.17	The data warehouse should use a partitioned table strategy to improve load performance and maximize query speed for the most actively accessed data.	D		
9.18	The system shall provide usage reports to be determined during design.	R		
9.19	The system shall provide the capability for system capacity monitoring including, but not limited to, server volume/capacity, and network volume/capacity.	R		
9.2	The system should provide tracking and reporting of IP addresses.	D		

#	Audit, Reporting and Data Management Technical Requirements	Required / Desirable	Billing Ability Code	**Proposed Solution/Comments**
9.21	The solution shall generate data and reports needed to comply with federal audit and oversight requirements.	R		
9.22	The solution should generate data and reports needed to comply with federal Exchange, Medicaid and CHIP Quality Control initiatives.	D		
9.23	The solution shall generate data on the administrative costs of the Exchange and waste, fraud and abuse as required by the ACA.	R		
9.24	The solution should generate reports on key success metrics.	D		
9.25	The solution shall generate data and reports on eligibility determination outcomes.	R		
9.26	The solution shall generate data and reports to support management of Assistors, Navigators and Caseworkers.	R		
9.27	The solution shall generate reports and data on consumer use of the solution.	R		
9.28	Capability of providing a reporting data model (preferably an OLAP model) that is independent of any specific 4GL reporting tool.	R		
9.29	The system should support report distribution based on reporting conditions, such as user defined data values.	D		
9.30	The system should provide the ability to direct reports to multiple outputs including email, screen, printer, and file.	D		
9.31	The system shall provide the ability for processing reports in batch.	R		
9.32	The system shall provide the ability to execute on-demand reports.	**R**		
9.33	Capability to add developer-defined fields.	R		
9.34	Capability to extend the data model in a manner that is compatible with Framework upgrades.	R		
9.35	Capability within the base data model to store effective and expiration dates for items being tracked.	R		

#	Audit, Reporting and Data Management Technical Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
9.36	Capability to prevent the alteration of information that has been deemed as historical.	R		
9.37	Capability to maintain the data model and associated dictionaries generate appropriate DDL for local modifications and new releases of the product.	R		
9.38	Capability to perform model to model comparison at the physical level.	D		
9.39	Capability to support conceptual, logical and physical modeling.	R		
9.4	Capability to reverse engineer, document, and inventory existing databases.	D		
9.41	Capability to gather and analyze database performance information and provide recommendations for improvement.	D		
9.42	The system shall employ one defined set of data standards (e.g., consistent data schema, data element, data class, field lengths, data tables, view naming conventions).	R		
9.43	The system should include metadata on all data fields stored in the web service and database, or for indexed documents in the document library to provide conditional or qualifying information about the information stored.	D		
9.44	The system shall provide consistency and validity checks on data elements at the database level.	R		
9.45	The system shall provide a data history in accordance with state and federal law (7 years is the general requirement except where otherwise indicated).	R		
9.46	The system shall provide the ability to archive records (i.e., remove from active system) based on administrator defined criteria.	R		
9.47	The system shall provide the ability to return archived records to the active system based on user request and/or administrator defined criteria.	R		
9.48	The system shall provide the ability to configure a retention schedule for records and documents.	R		

#	Audit, Reporting and Data Management Technical Requirements	Required / Desirable	Billing Ability Code	**Proposed Solution/Comments**
9.49	The system should provide the ability to save report results in various formats (e.g., Microsoft Word, ASCII files, Microsoft Excel, Text files (.txt), PDF format, HTML, XML).	D		
9.50	The system shall provide the ability to immediately notify a user of data entry errors.	R		
9.51	The system should provide the ability to prompt users to save unsaved data/information.	D		
9.52	The system should provide the ability to automatically identify inconsistencies between the case record and information received from interfaces as specified by the State.	D		
9.53	The system shall provide full and incremental data backup and recovery capabilities.	R		
9.54	The system shall include recovery procedures for all backups taken.	R		
9.55	The system should support, when recovery from the backup is being performed, restoration of data and services on a priority basis, such that priority data are accessible while the recovery is completed.	D		
9.56	The system shall ensure that no data (zero data loss) is lost through the service in any event.	R		
9.57	The system shall include tools for system backups and restores (e.g., data backup, system configuration backup).	R		

10. NOTIFICATION & FULFILLMENT

Notification and Fulfillment Technical Requirements

#	Notification and Fulfillment Technical Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
10.1	All generated notifications/correspondence must be deliverable via the following channels: • Online (that is, viewable and printable through the web portal) • Email (for users for whom an email address is known • Printed and delivered by U.S. Mail	R		
10.12	The system must provide a separate notification service that is used to send email notifications (that is, the application should not submit email messages to an SMTP server directly).	R		
10.13	The notification service should be able to manage all forms of notification/correspondence in a single service.	D		
10.14	The notification service must allow various application components to submit requests to send emails to recipients.	R		
10.15	The Exchange solution must use its own SMTP server to send Exchange-related email messages.	R		
10.16	The notification service should be able to queue printed notification requests and submit them as a bundled batch to the Exchange's preferred fulfillment provider.	R		
10.17	The Exchange solution must allow authorized users to download correspondence from the online portal in a printable format (e.g. PDF) for printing on-demand and one-off mailings.	R		
10.18	The Exchange solution must be able to receive notifications from other systems and agencies, such as NE-DHHS and then fulfill those notifications.	R		

#	Notification and Fulfillment Technical Requirements	Required / Desirable	Billing Ability Code	**Proposed Solution/Comments**
10.19	Capability for high volume document generation using industry standard emitting (e.g. PCL, Postscript, PDF, etc.).	R		
10.20	Capability for on-demand document generation.	R		
10.21	Capability for interactive document generation.	R		
10.22	Capability to support a WYSIWYG presentation environment.	D		
10.23	Capability to support a WYSIWYG correspondence development environment allowing both experienced developers and casual business users to create documents in a timely fashion.	R		
10.24	Capability to support multi-channel delivery models including secure/unsecure e-mail, Web portal message center, telephone, fax, printed mail, text message, etc.	R		
10.25	Capability to integrate with the OnBase repository	D		
10.26	Capability to keep revision history of documents and provide an automated and integrated document review/approval/promotion process.	**R**		

11. BUSINESS RULES ENGINE

Business Rules Engine Technical Requirements

#	**Business Rules Engine**	**Required/Desirable**	**Billing Ability Code**	**Proposed Solution/Comments**
11.1	Capability to verify consistency of rules definitions through a user defined configuration.	R		
11.11	Capability to allow definition of the relationships between different rules.	R		
11.12	Capability to test rules independently from the application with which they are being integrated.	R		

#	Business Rules Engine	Required/Desirable	Billing Ability Code	**Proposed Solution/Comments**
11.13	Capability to debug rules using an integrated tool.	R		
11.14	Capability to assign effective date segments to rules to control when rules are applied and to allow the storage and application of rules in historical, current, and future contexts.	R		
11.15	Capability to invoke rules as a service from the service integration capability as well as directly from other system modules.	R		
11.16	The BRE should store rules in an English language person readable format.	D		
11.17	The BRE must be able to import and export rules in a standardized format.	R		
11.18	The BRE must be effective dated and have a version control capability. (Start Date and End Date)	R		
11.19	The BRE should be able to recreate results on a unique set of data regardless of when the rules are executed. Modeling and What-if situations are required.	D		
11.2	The BRE must be subject to version control and follow standard software code promotion and testing procedures.	R		
11.21	The BRE must have the capability to record and output the exact reasons and/or basis for decisions determined by the Rules Engine.	R		
11.22	The BRE should include a workflow process that should dynamically change work in the queue.	D		

12. BUSINESS ACTIVITY MONITORING & BUSINESS PROCESS MANAGMENT

Business Activity Monitoring & Business Process Management Technical Requirements

#	Business Activity Monitoring and Business Process Management Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
12.1	Capability to monitor business processes, transactions, communications, and other measures of business effectiveness in near real time via integration with other Framework components.	R		
12.12	Capability to configure the Key Performance Indicators using pre-defined functions, algorithms, and displays.	R		
12.13	Capability to notify users, via multiple channels, when the measured performance is outside tolerances.	R		
12.14	Capability for users upon notification of performance outside tolerance to identify the cause of the performance issue.	R		
12.15	Capability to provide dashboard and other report types suitable for business activity monitoring including templates for common display types.	R		
12.16	Capability to provide workload statistics (e.g., work-in-process, queues, waiting-for-resources).	R		
12.17	Produces outputs easily understood and consumed by business users and leaders.	R		
12.18	Capability to automatically manage complex workflow patterns that are system-based, human-based, or a mixture of both.	R		
12.19	Capability to design workflows, preferably using Business Process Model and Notation (BPMN).	R		

#	Business Activity Monitoring and Business Process Management Requirements	Required / Desirable	Billing Ability Code	**Proposed Solution/Comments**
12.20 **12.21**	Capability to perform process orchestration. Capability to perform process choreography.	R R		
12.22	Capability to store process designs with version control and multi-environment deployment functions.	R		
12.23	Capability to import and export process designs using an industry standard format, such as Business Process Execution Language (BPEL) or XML Process Definition Language (XPDL).	R		
12.24	Capability to simulate and analyze workflows to discover bottlenecks and inefficiencies and to estimate process execution timelines.	R		
12.25	Capability to browse and select services available via the service integration capability in order to facilitate process design.	R		
12.26	The system shall distribute work to staff queues.	R		
12.27	The system shall manage work to staff queues.	R		
12.28	The system shall provide capability to create work flow entries.	R		
12.29	The system shall provide the ability to route imaged correspondence to any work queue.	R		
12.3	The system shall provide the ability to schedule events (e.g., reminders, notification generation, business process execution, etc.).	R		
12.31	The system shall provide the ability to associate the scheduled event with a system record (e.g., case record to an event).	R		
12.32	The system shall provide the ability to attach documentation to the scheduled event.	R		

#	Business Activity Monitoring and Business Process Management Requirements	Required / Desirable	Billing Ability Code	Proposed Solution/Comments
12.33	The system shall provide the ability to notify a user of a scheduled event based on user-defined criteria (e.g., reminder time, delivery mechanism).	R		
12.34	The system shall provide the ability to modify existing scheduled events (e.g., begin date, end date, frequency, and business process specific information).	R		

13. ENTERPRISE SERVICE BUS

Enterprise Service Bus Technical Requirements

#	Enterprise Service Bus	Required/Desirable	Billing Ability Code	Proposed Solution/Comments
13	Capability to support multiple synchronous and asynchronous communications protocols.	R		
13.1	Capability to support service mapping (locating and binding).	R		
13.2	Capability to support various message exchange protocols, such as request/response, send-and-forget, and publish/subscribe.	R		
13.3	Capability to provide guaranteed message delivery.	R		
13.4	Capability to support content-based, rules-based, policy-based and static/deterministic routing.	R		
13.5	Capability to support protocol conversion between endpoints and enforce protocol standards.	R		

#	Enterprise Service Bus	Required/Desirable	Billing Ability Code	**Proposed Solution/Comments**
13.6	Capability to support data transformation between endpoints and enforce data standards.	R		
13.7	Capability to support a standardized security model to authorize, authenticate, audit, and log events and interactions.	R		
13.8	The service integration capability should be independent of operating systems and programming languages. For example, it should enable interoperability between Java and .NET services.	R		
13.9	Capability to support quality of service by providing process, queue and transaction activity monitoring and controls.	R		

14. INTEGRATED DEVELOPMENT ENVIRONMENT

Integrated Development Environment Technical Requirements

#	**Integrated Development Environment**	**Required/Desirable**	**Billing Ability Code**	**Proposed Solution/Comments**
14	Capability to create and edit the source code used for the various capabilities and components and that includes features such as keyword highlighting, auto-completion of method calls, integration with application programming interface documentation, automated refactoring support, class/source browser, method call hierarchies, automatic code generation, etc.	R		
14.1	Capability to debug code in a running application, including the ability to set breakpoints, monitor variable values, adjust variable values on the fly, etc.	R		

#	Integrated Development Environment	Required/Desirable	Billing Ability Code	**Proposed Solution/Comments**
14.2	Capability to compile (and, if necessary, link) code and report errors and deviations (e.g., use of deprecated methods) with links to errant lines of code.	R		
14.3	Capability to automatically build and deploy an application or module in a format that is executable by the runtime environment.	R		
14.4	Capability to manage versioning and configuration of source code (including branches and merges), builds for particular environments, and other development artifacts in a repository.	R		
14.5	Capability to restrict read and/or write access to source code and other artifacts in the repository.	R		
14.6	Capability to profile the performance of the executing code to help identify and resolve bottlenecks.	D		
14.7	Capability to perform automated unit and integration testing using tools integrated with the IDE.	D		
14.8	Capability to extend the IDE capabilities via plug-ins or other similar technical approaches.	D		
14.9	Capability for the IDE to run on Windows, Mac OS X, and Linux clients.	D		
14.91	Capability to integrate with a bug tracking application.	D		
14.92	Capability to automatically generate API documentation consistent with the source code.	D		
14.93	Capability to assist in the creation of Web page graphic designs, CSS, W3C and Section 508 compliance editing, and other abilities to enhance productivity in creating Web pages.	**R**		

15. CONFIGURATION MANAGEMENT

Configuration Management Technical Requirements

#	Configuration Management	Required/Desirable	Billing Ability Code	Proposed Solution/Comments
15	The system shall support version tracking.	R		
15.1	The system shall support coordinated promotion of all application components.	R		
15.2	The system shall use check-in check-out concepts to support multiple developers towards a common project.	R		
15.3	The system shall allow for the use of third party version and migration control tools to manage application source code and deployment.	R		
15.4	The configuration management tool shall support parallel and iterative development.	R		
15.5	The configuration management tool shall support reliable backup and restore.	**R**		

16. REGULATIONS

Regulations Technical Requirements

#	Regulations	Required/Desirable	Billing Ability Code	Proposed Solution/Comments
16.1	The Exchange should comply with Title XIX and related regulations and guidance.	D		
16.2	The solution should comply with Title XXI and related regulations and guidance.	D		

#	Regulations	Required/Desirable	Billing Ability Code	**Proposed Solution/Comments**
16.3	The system must meet the Seven Standards and Conditions for Medicaid Technology Investments and be eligible for enhanced match funding and that their proposed solution architecture is compliant with these standards and conditions. The final regulations establishing these standards were published in 42 CFR Part 433.	R		
16.4	The solution shall comply with the CFR Part 433 Medicaid Program: Federal Funding for Medicaid Eligibility Determination and Enrollment Activities Final Rule.	R		
16.5	The solution shall comply with the Office of the National Coordinator's Nationwide Privacy and Security Framework for Electronic Exchange of Individually Identifiable Health Information.	R		
16.6	The solution shall comply with the Guidance for Exchange and Medicaid Information Technology (IT) Systems Version 1.0.	R		
16.7	The solution shall comply with the Guidance for Exchange and Medicaid Information Technology (IT) Systems Version 2.0.	R		
16.8	The solution shall comply with the HIPAA Transaction Codes	R		
16.9	The solution shall comply with the Medicaid Information Technology Architecture (MITA) supplements.	R		
16.91	The solution shall comply with the Section 504 of the Rehabilitation Act.	R		
16.92	The solution shall comply with the Section 6103 of the Internal Revenue Code.	R		
16.93	The solution should comply with the Clinger-Cohen Act (Public Law 104-106).	D		

#	Regulations	Required/Desirable	Billing Ability Code	**Proposed Solution/Comments**
16.94	The solution shall comply with the Exchange Reference Architecture: Foundation Guidance.	R		
16.95	The solution shall comply with the Collaborative Environment and Governance Approach – Exchange Reference Architecture Supplement.	R		
16.96	The solution shall comply with the Harmonized Security and Privacy Framework – Exchange TRA Supplement.	R		
16.97	The solution should comply with the Eligibility and Enrollment Blueprint – Exchange Business Architecture Supplement.	D		
16.98	The solution should comply with the Plan Management Blueprint – Exchange Business Architecture Supplement.	D		
16.99	The solution should comply with the U.S. Chief Information Officer (US CIO) 25 Point Implementation Plan to Reform Federal Technology Management.	D		
16.991	The solution shall comply with the guidance given by the ONC, mandated by Section 1561 of the Affordable Care Act regarding Electronic Eligibility and Enrollment.	R		
16.992	The solution shall comply with IRS Publication 1075, Tax Information Security Guidelines for Federal State and Local agencies	R		