

REVISED Appendix C Non-Functional Requirements
November 26, 2013
Request for Proposal Number 4544Z1

The Non-Functional Requirements Traceability Matrix (RTM) is used to document and track the project requirements from the proposal through to testing to verify that the requirement has been completely fulfilled. The Contractor will be responsible for maintaining the set of Baseline Requirements directly related to the configuration of the EES. Additions, modifications, and deletions to these requirements will be added and modified throughout the project so it is imperative that a current version of the matrix be maintained at all times.

Bidders must provide an initial RTM as part of its proposal. The RTM shall follow the instructions below. The Bidder must state requirements exactly as they are provided in this RFP. The Bidder must indicate how it will achieve full compliance (i.e., requirement fulfilled 100%). Any requirements that the Bidder cannot attest to full compliance must be documented as outlined in Appendix D: Gap Analysis.

Bidders are required to provide a response, using the appropriate codes provided in the tables below, for each requirements listed in the Functional Requirements Response Matrix. Scoring for each requirement will directly relate to the Ability Code indicated by the Bidder.

1.

Ability Code	Condition	Description
S	Standard Function	The proposed EES fully satisfies the requirement as stated. The Bidder must describe how the requirement is satisfied by the EES.
W	Workflow or System Configuration Required	Current functionality of the proposed EES exists in the EES and can be modified by a system administrator to meet this requirement. The Bidder must describe how the requirement will be satisfied.
M	Modification Required	The proposed EES requires a modification to existing functionality to meet this requirement which requires a source code modification. The EES will be modified to satisfy the requirements as stated or in a different format. The Bidder must describe the modifications. If the modification requires 1000 or more hours the Bidder must also complete Appendix D Gap Analysis.
F	Planned for Future Release	This functionality is planned for a future release. The Bidder must describe how the requirement will be satisfied by the EES and when the release will be available.
C	Custom Design and Development	The proposed EES requires new functionality to meet this requirement which requires a source code addition. The Bidder must describe the feature and its value. If the custom design and development requires 1000 or more hours the Bidder must also complete Appendix D Gap Analysis.
N	Cannot Meet Requirement	The proposed EES will not satisfy the requirement. The Bidder must describe why the requirement cannot be satisfied. The Bidder must complete Appendix D Gap Analysis.
O	Other Software	If the requirement is to be satisfied through the use of a separate software package(s), the Bidder must identify those package(s) and describe how the functionality is integrated into the base system

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1. General System Requirements

Req #	Requirement Description	Bidding Ability Code	Proposed EES/Comments
GSR 001	The EES shall follow a modular, flexible approach to systems development which is consistent with the MITA 3.0 guidelines, the CMS Exchange Reference Architecture, and Service-Oriented Architecture (SOA) design principles.		
GSR 002	The EES shall follow an n-tiered (layered) architectural approach in which presentation, business logic, and data access are separated.		
GSR 003	The EES shall provide scalable architecture.		
GSR 004	The EES shall be architected with no single point of failure, supporting a high-availability enterprise.		
GSR 005	The EES shall be deployable to servers running one of the following operating systems: - Linux - Unix - Windows - z/OS		
GSR 006	The EES shall support deployment on virtualized servers to support scalability and flexibility.		
GSR 007	All infrastructure software used by the EES (operating system, databases, web servers, network management, etc.) shall be a version that is currently supported under standard maintenance agreements and is generally available during the life of the contract.		
GSR 008	The EES shall incorporate an 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.		
GSR 009	The rules engine shall be scalable and flexible to allow it to support expanded eligibility and enrollment rules in the future.		
GSR 010	The EES shall use an enterprise workflow engine to support the routing of work items, work queues, etc.		
GSR 011	The EES shall leverage an electronic document management system that is integrated with the workflow engine to support the storage and retrieval of document images associated with member and eligibility and enrollment processes.		

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Req #	Requirement Description	Bidding Ability Code	Proposed EES/Comments
GSR 012	The EES shall use an industry-standard commercial Relational Database Management System (RDBMS), Application Server, and Web Server infrastructure.		
GSR 013	The EES' transactional databases shall 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 EES		
GSR 014	The EES shall 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		
GSR 015	The EES shall employ an Enterprise Service Bus (ESB) that serves as the integration backbone and the broker between service consumers and producers.		
GSR 016	The EES shall provide a business process layer that manages/orchestrates executable business processes via the ESB, including reusable business services such as encryption, compression, validation, and dynamic routing.		
GSR 017	The EES shall be architected using Business Process Management and workflow technologies as the primary integrated vehicle to implement business processes by composing them from human interactions and coarse-grained services.		
GSR 018	The EES shall support multi-node application server processing so that application processing load can be distributed and balanced across multiple physical servers.		
GSR 019	The EES architecture shall ensure that reporting and batch processing does not interfere with general system responsiveness or availability.		
GSR 020	The EES workflow, web pages and program functions, shall be configurable and modifiable without changing program code.		
GSR 021	The EES shall be designed and developed using a component-based architecture that is modifiable and reusable.		
GSR 022	The EES shall be designed, built and deployed in accordance with Enterprise Architecture best practices.		
GSR 023	The EES shall be built upon an infrastructure that is easily upgradable through patches and point releases, including the upgrading of the EES software and all prerequisite infrastructure software and the application of data migration or update scripts.		

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GSR 024	The EES shall have the ability to interact with the N-FOCUS legacy system to allow for all functionality of the old and new systems to be available.		
GSR 025	The EES shall comply with CMS requirements to establish a framework of enabling technologies and processes that support improved administration of the Medicaid program.		
GSR 026	The EES shall provide the ability to terminate, reverse or back-out a software update in the event it is discovered the update is erroneous or corrupted. The EES shall provide the ability to restore the data to the state prior to the update.		
GSR 027	The EES shall provide a clearly defined promote-to-production process that enforces a strictly defined methodology for movement from development to QA and production.		
GSR 028	The EES shall provide the ability to roll back data and software releases/programs as requested by DHHS during testing cycles.		
GSR 029	The EES shall provide DHHS with all changes, modifications, enhancements, or customized features it makes to any licensed software approved by the Department to be used in The EES.		
GSR 030	The EES shall include appropriate checkpoint/restart capabilities, and other features necessary to ensure reliability and recovery, including telecommunications reliability, file backups, and disaster recovery.		
GSR 031	The EES shall be deployed primarily as a web-based interface, so that users only need a web browser to access the EES.		
GSR 032	The EES workflow, web pages, and program functions shall be configurable and modifiable without changing program code.		
GSR 033	The EES shall maintain the security requirements set forth by federal and Nebraska government.		
GSR 034	The EES shall be scalable and flexible enough to accommodate any changes required by Nebraska and/or federal statute, mandate, decision or policy.		
GSR 035	The EES shall support multiple deployment environments, including development, test, training, and production. (sandbox, break-fix)		

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Req #	Requirement Description	Bidding Ability Code	Proposed EES/Comments
GSR 036	The EES shall provide the following testing functions: <ul style="list-style-type: none"> - Functional Testing - Regression Testing - Load & Performance Testing - Test case creation and tracking - Test data generation (i.e. data masking, data filtering, etc.) 		
GSR 037	The EES should make the rules engine available in a shared services model to be accessed by other Nebraska systems.		
GSR 038	The EES should leverage an enterprise content management system to store digital content, downloadable forms, and personalized on-screen content.		
GSR 039	The EES should assure that third party software, used for ancillary aspects of the EES, that require distribution or maintenance to remote desktops or servers can be capable of being distributed and configured on user work stations from a central site and not require onsite intervention. In other words, software should support "silent" or unattended installation functionality for any non-web based features.		
GSR 040	The EES should be able to support the following multi-agency configurations:		
GSR 041	<ul style="list-style-type: none"> • Two or more independent yet integrated Agencies in a single instance of the business application running on a single instance of the technical infrastructure 		
GSR 042	<ul style="list-style-type: none"> • 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 		
GSR 043	<ul style="list-style-type: none"> • 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. 		
GSR 044	The EES should include a service management layer that provides the following:		
GSR 045	<ul style="list-style-type: none"> • A registry/repository in which all services related to the EES can be published. This registry should support Universal Description Discovery and Integration (UDDI) and the Web Services Description Language (WSDL) 		
GSR 046	<ul style="list-style-type: none"> • Service monitoring, logging, and audit 		

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GSR 047	<ul style="list-style-type: none"> • Should be open to others and reusable by other systems and agencies 		
GSR 048	The EES should ensure that the use of acronyms and codes are consistent across the EES components (windows, screens, reports and databases or data dictionary).		
GSR 049	The EES should provide the ability to support client services through a variety of channels. This may include, but is not limited to web, kiosks, call centers, other organizations, and walk ins.		
GSR 050	The EES should allow new data items to be automatically included in migration paths during software upgrades.		
GSR 051	The EES should document and expose all SOA services using standard WSDL and industry best practices.		
GSR 052	The EES should leverage webs services and adhere to key standards such as SOAP, XML, UDDI, WSDL, BPEL, SAML, and other standards as detailed by the Department.		
GSR 053	The EES should define service modules independently, with the interface modules bridging the gap between modules.		
GSR 054	The EES should provide the ability to refresh each environment.		
GSR 055	The EES should have the ability to backup, recover, restart, and cancel jobs.		
GSR 056	The EES should utilize a web portal that is scalable and has the ability to accommodate additional systems and content in the future.		

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2. Service Oriented Architecture (SOA) Requirements

Req #	Requirement Description	Bidding Ability Code	Proposed EES/Comments
SOA 001	The EES components shall be committed to an advanced approach to interoperability using web services and SOA aligned with Nebraska standards and vision for interoperability.		
SOA 002	The EES shall provide the ability to distribute services amongst different components and tiers of the architecture.		
SOA 003	The EES shall develop/integrate services using standardized Web Services formats.		
SOA 004	The EES shall allow for centralized service maintenance (new, update, delete).		
SOA 005	The EES shall provide the ability to publish services and related data to be used by different types and classes of service consumers.		
SOA 006	The EES shall ensure enterprise-wide access to services through all required channels such as Nebraska facilities, phone, mail, and online via the Internet.		
SOA 007	The EES shall provide the capabilities for a Real-Time (or near real-time) Integrated Enterprise where common data elements about the consumers served and services rendered are easily shared across organizational units with appropriate adherence to security and privacy restrictions.		
SOA 008	The EES shall establish an interoperability layer that supports interactions among components via a variety of protocols (HTTP/plain old XML, SOAP, Internet Inter-ORB Protocol [IIOP], .NET remoting, Message-Oriented Middleware [MOM] protocols, file transfer protocols and others) and interaction styles (request/reply, conversational, publish and subscribe, asynchronous messaging and others).		
SOA 009	The EES shall implement synchronous and asynchronous program-to-program communication, moving messages between SOA service consumer modules and service provider modules at runtime. The ESB component may also move files, database rows and other data.		

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Req #	Requirement Description	Bidding Ability Code	Proposed EES/Comments
SOA 010	EES shall implement a SOA by using an ESB, responsible to monitor and control routing of message exchange between services, resolve contention between communicating service components, control deployment and versioning of services and marshal use of redundant services.		
SOA 011	EES shall support creation and extension of service interfaces through the use of WSDL.		

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3. Interoperability & Interfaces Requirements

Req #	Requirement Description	Bidding Ability Code	Proposed EES/Comments
IO1 001	The EES shall provide a SOA based infrastructure (i.e. hub and spoke) for connecting to other EESs using an ESB infrastructure.		
IO1 002	The EES's Interface architecture for internal A2A (Application to Application) integration shall not have a negative impact on the user experience and expectation for application performance. All points of contacts for A2A communications shall be documented.		
IO1 003	The EES's interfaces shall secure and protect the data and the associated infrastructure from a confidentiality, integrity and availability perspective.		
IO1 004	The EES shall be able to support Application to Application (A2A) synchronous and asynchronous messaging using web services. The messaging capabilities will be able to support a wide variety of A2A patterns including, but not limited to, the following: -		
IO1 005	<ul style="list-style-type: none"> • Data look-up and retrieval 		
IO1 006	<ul style="list-style-type: none"> • Data look-up with services provided by other applications 		
IO1 007	<ul style="list-style-type: none"> • Simple bulk data transfer to/from other EES's. 		
IO1 008	The EES' interface infrastructure shall continue to operate despite failure or unavailability of individual technology components such as a server platform or network connection.		
IO1 009	The EES shall have the capability to notify System Administrators/system support staff if an interface is not available for any reason. The notification and issue(s) shall be invisible to the applicant/beneficiary/client.		
IO1 010	The EES' interfaces must be scalable to accommodate changes in scale including changes in user population, transaction volume, throughput and geographical distribution.		
IO1 011	The EES shall be capable of making any changes to the interface data elements/layouts easily, and to test those changes.		
IO1 012	The EES shall implement, at a minimum, interfaces (both real-time or batch) with the applications and data sources listed in "Interface List - N-FOCUS" document included in the procurement library.		

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Req #	Requirement Description	Bidding Ability Code	Proposed EES/Comments
IOI 013	The EES shall provide the capability to detect and remediate errors caused by batch processing and real time processing via user defined rules		
IOI 014	The EES shall provide the capability to perform source to destination file integrity checks for exchange data and alert appropriate parties with issues		
IOI 015	The EES shall build in contingencies for the storage of transactions where there is dependency on availability of data from business partners that provide authoritative data (e.g., the IRS, DHS, and SSA).		

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4. Scalability and Extensibility Requirements

Req #	Requirement Description	Bidding Ability Code	Proposed EES/Comments
SCA 001	The EES shall be designed for ease of maintenance and readily allow future functional enhancements. This shall be accomplished through use of modern design principles for SOA, applying principles of modularity, interface abstraction, and loose coupling.		
SCA 002	The EES shall be adequately flexible to keep up with ever changing technology and regulatory changes. This shall be accomplished by separating workflow and business rules into their own separate tiers.		
SCA 003	The EES shall be scalable and adaptable to meet future growth and expansion/contraction needs such that the EES can be expanded on demand and be able to retain its performance levels when adding additional users, functions, and data.		
SCA 004	The screens shall be highly re-configurable, providing ability to reposition and rename field labels/data fields, remove or "turn-off" unused fields, maintain data, and allow addition of custom-defined fields.		
SCA 005	The Department shall be able to modify the labels and arrangement of information in the data model EES documentation templates and can create custom data fields.		
SCA 006	The EES shall provide the ability to create and/or modify edits and business rules which determine the correctness/integrity of data.		
SCA 007	The EES shall provide the ability for on-line access by any site connected to the organization WAN.		
SCA 008	The EES shall provide the capability for remote access in compliance with existing Nebraska / federal connectivity/security policies.		

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5. EES Performance Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
PER 001	The Contractor must build the EES such that expansion of the system can be achieved with a minimum of additional system administration burden and staffing.		
PER 002	EES Administration staffing requirements and workload should be minimally impacted with expanded system usage.		
PER 003	The Contractor must build the EES so that there is a near linear relationship between each additional server added, and the additional load that can be accommodated (load vs. capacity added), up to specified limit.		
PER 004	The EES shall use fully redundant network and hardware. Hardware components (such as processor and memory) should have built-in redundancy to allow a second component to take over in the event of a failure in the primary component. Similarly, redundant paths should also exist for networks.		
PER 005	The EES shall leverage virtualization to expedite disaster recovery.		
PER 006	The EES shall have the ability to support either a Production and hot (real time replication) disaster recovery design or a multi host site Production design that would allow one site to seamlessly be offline and the other site would maintain service without interruption.		
PER 007	The EES shall include a disaster recovery plan and provide contingency plans for client lookup capabilities and online collaboration in the event of a disaster.		
PER 008	The EES shall provide the ability to recover from data loss due to end user error and application error.		
PER 009	The EES shall provide the ability to perform archival/incremental backups and the ability to perform open/closed database backups.		
PER 010	The EES shall provide tools for managing an environment that supports both high availability and disaster recovery.		
PER 011	The EES shall include the capability to maintain all data according to Department defined records retention guidelines (i.e. record schedule). In general document retentions range from 3 to 10 years.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
PER 012	The EES shall include the capability to maintain all images and electronic documents according to Department defined document retention guidelines (i.e. record schedule).		

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6. Regulatory & Security Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
RSR 001	The EES must provide a mechanism to comply with EES security requirements and safeguards requirements following federal agencies/entities:		
RSR 002	<ul style="list-style-type: none"> • United States Department of Agriculture (USDA) 		
RSR 003	<ul style="list-style-type: none"> • Food & Nutrition Services (FNS) 		
RSR 004	<ul style="list-style-type: none"> • Internal Revenue Service (IRS) 		
RSR 005	<ul style="list-style-type: none"> • Social Security Administration (SSA) 		
RSR 006	<ul style="list-style-type: none"> • Department of Health & Human Services (DHHS) Center for Medicare & Medicaid Services (CMS) 		
RSR 007	<ul style="list-style-type: none"> • Administration for Children & Families (ACF) 		
RSR 008	<ul style="list-style-type: none"> • NIST 800-53 and DOD 8500.2 		
RSR 009	<ul style="list-style-type: none"> • Federal Information Security Management Act (FISMA) of 2002 		
RSR 010	<ul style="list-style-type: none"> • Health Insurance Portability and Accountability Act (HIPAA) of 1996 		
RSR 011	<ul style="list-style-type: none"> • Health Information Technology for Economic and Clinical Health Act (HITECH) of 2009 		
RSR 012	<ul style="list-style-type: none"> • Privacy Act of 1974 		
RSR 013	<ul style="list-style-type: none"> • e-Government Act of 2002 		
RSR 014	<ul style="list-style-type: none"> • Patient Protection and Affordable Care Act of 2010, Section 1561 Recommendations 		
RSR 015	<ul style="list-style-type: none"> • Safeguards for Protecting Federal Tax Returns and Return Information (26 U.S.C. Section 6103 and related provisions) 		
RSR 016	<ul style="list-style-type: none"> • Health Insurance Portability and Accountability Act (HIPAA) 		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
RSR 017	<ul style="list-style-type: none"> • Family Educational Rights and Privacy Act (FERPA) 		
RSR 018	<ul style="list-style-type: none"> • Health Information Technology for Economic and Clinical Health (HITECH) Act 		
RSR 019	<ul style="list-style-type: none"> • NIST 800-53A 		
RSR 020	<ul style="list-style-type: none"> • NIST 800-53 version 4 Recommended Security Controls for Federal Information Systems Information Security 		
RSR 021	<ul style="list-style-type: none"> • NIST 800-44 version 2 Guidelines on Security Public Web Servers 		
RSR 022	<ul style="list-style-type: none"> • NIST 800-77 Security Configuration Checklist Program for IT Products – Guidance for checklist Users and Developers. 		
RSR 023	<ul style="list-style-type: none"> • IRS Publication 1075, Tax Information Security Guidelines for Federal State and Local agencies, which points back to NIST 800-53 rev 3 		
RSR 024	<ul style="list-style-type: none"> • CMS requirements, which points back to NIST 800-53 rev3 moderate baseline 		
RSR 025	<ul style="list-style-type: none"> • Guidance from CMS including MITA Framework 2.0 and Harmonized Security and Privacy Framework 		
RSR 026	<ul style="list-style-type: none"> • 45 CFR Part 95.621(f) ADP System Security Requirements and Review Process 		
RSR 027	<ul style="list-style-type: none"> • Standards defined in federal Information Processing Standards (FIPS) issued by the National Institute of Standards and Technology (NIST) 		
RSR 028	<ul style="list-style-type: none"> • FIPS PUB 112 Password Usage Procedure 		
RSR 029	<ul style="list-style-type: none"> • FIPS PUB 186-3 Digital Signature Standard June 2009 		
RSR 030	<ul style="list-style-type: none"> • Nebraska Electronic Signature Statute http://www.legislature.ne.gov/laws/statutes.php?statute=86-611 		
RSR 031	<ul style="list-style-type: none"> • Records Usage, Duplication, Retention, Re-disclosure and Timely Destruction Procedures/Restrictions 5 U.S.C. 552a (o)(1)(F), (H) and (I) 		
RSR 032	<ul style="list-style-type: none"> • Federal Records Retention Schedule 44 U.S.C. 3303a 		

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RSR 033	<ul style="list-style-type: none"> • Computer Matching and Privacy Protection Act of 1988 (CMPPA) 		
RSR 034	<ul style="list-style-type: none"> • SSA Information System Security Guidelines for federal, State, and Local Agencies 		
RSR 035	<ul style="list-style-type: none"> • Title XIX Confidentiality Rules 		
RSR 036	The EES shall conform to the sub-parts of Section 508 of the Americans with Disabilities Act (ADA), and any other appropriate Nebraska or federal disability legislation.		
RSR 037	The EES shall comply with all applicable Nebraska security policies and adhere to all legal, statutory, and regulatory requirements, as determined by Nebraska Leadership.		
RSR 038	The EES should have a unique identifier which is not the SSN.		
RSR 039	The EES shall comply with accessibility requirements described in 45 CFR 85 and with Nebraska accessibility requirements.		
RSR 040	The EES shall comply with Nebraska branding standards as defined by the Department.		
RSR 041	The Contractor shall adhere to the principle of “Fail Safe” to ensure that a system in a failed state does not reveal any sensitive information or leave any access controls open for attacks.		
RSR 042	The EES shall allow for controlled access to participant records. Users will be able to view participant data within the EES at the Department defined levels of access based on user security privileges.		
RSR 043	The EES shall maintain a level of security that is commensurate with the risk and magnitude of the harm that could result from the loss, misuse, disclosure, or modification of information.		
RSR 044	Information security shall be built into the EES from its inception rather than “bolted on” after the EES has been implemented.		
RSR 045	The EES shall support security at the object level (e.g. Table, View, Index).		
RSR 046	The EES shall support security at the row and column level.		
RSR 047	The EES shall support auditing at the object level (i.e. Table, Column).		

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RSR 048	The EES shall provide the ability for concurrent users to simultaneously view the same record, documentation and/or template.		
RSR 049	The EES shall provide protection to maintain the integrity of data during concurrent access.		
RSR 050	The software used to install and update the systems, independent of the mode or method of conveyance, shall be certified free of malevolent software ("malware"). Contractor may self-certify compliance with this standard through procedures that make use of commercial malware scanning software.		
RSR 051	The EES shall be configurable to prevent corruption or loss of data already accepted into the EES in the event of an EES failure (e.g. integrating with a UPS, etc.).		
RSR 052	The EES shall support protection of confidentiality of all Protected Health Information (PHI) delivered over the Internet or other known open networks via encryption using triple-DES (3DES) or the Advanced Encryption Standard (AES) and an open protocol such as Transport Layer Security (TLS), Secure Sockets Layer (SSL), Internet Protocol Security (IPsec), XML encryptions, or Secure/Multipurpose Internet Mail Extensions(S/MIME) or their successors.		
RSR 053	The EES, when storing PHI on any device intended to be portable/removable (e.g. smartphones, portable computers, portable storage devices), shall support use of a standards based encrypted format using 3DES, AES or their successors.		
RSR 054	The EES, prior to access to any PHI, shall display a configurable warning or login banner (e.g. "The EES should only be accessed by authorized users"). In the event that an EES does not support pre-login capabilities, the EES shall display the banner immediately following authorization.		
RSR 055	The EES shall comply with Title XIX and related regulations and guidance.		
RSR 056	The EES shall comply with Title XXI and related regulations and guidance.		
RSR 057	The EES shall comply with the Office of the National Coordinator's Nationwide Privacy and Security Framework for Electronic Exchange of Individually Identifiable Health Information.		

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RSR 058	The EES shall comply with the Section 504 of the Rehabilitation Act.		
RSR 059	The EES shall comply with the Section 6103 of the Internal Revenue Code.		
RSR 060	The EES should comply with the National Information Exchange Model (NIEM).		
RSR 061	The EES should support processing of data in multiple formats such as XML, X12, and other industry standard formats.		
RSR 062	The EES shall provide for security concepts covering the following components: Virtual Private Network (VPN), firewall technology and Demilitarized Zone (DMZ), virus-/intrusion detection, mail/content filtering avoiding fault positives, encryption, Public Key Infrastructure (PKI).		
RSR 063	The EES upon detection of inactivity of an interactive session shall prevent further viewing and access to the EES by that session by terminating the session, or by initiating a session lock that remains in effect until the user reestablishes access using appropriate identification and authentication procedures. The inactivity timeout shall be configurable.		
RSR 064	The EES shall enforce a limit of (configurable) consecutive invalid access attempts by a user. The EES shall protect against further, possibly malicious, user authentication attempts using an appropriate mechanism (e.g. locks the account/node until released by an administrator, locks the account/node for a configurable time period, or delays the next login prompt according to a configurable delay algorithm).		
RSR 065	The EES shall provide the capability to prevent database administrators from seeing the data in databases they maintain.		
RSR 066	The EES shall provide the ability to maintain a directory of all personnel who currently use or access the system/IVR/SQL database.		
RSR 067	The EES shall provide the ability to create and maintain a directory of external providers to facilitate communication and information exchange.		
RSR 068	The EES shall provide the ability to identify certain information as confidential (e.g. PII, PHI, etc.) and only make that accessible by appropriately authorized users.		

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RSR 069	The EES shall restrict access to summarized information according to organizational policy, scope of practice, and jurisdictional law.		
RSR 070	The EES must be able to associate permissions with a user using one or more of the following access controls:		
RSR 071	<ul style="list-style-type: none"> User-based (access rights assigned to each user) 		
RSR 072	<ul style="list-style-type: none"> Role-Based Access Controls (RBAC; users are grouped by role and access rights assigned to these groups) 		
RSR 073	<ul style="list-style-type: none"> Context-based (role-based with additional access rights assigned or restricted based on the context of the transaction such as time-of-day, workstation-location, emergency-mode, etc.) 		
RSR 074	The EES shall provide the ability to prevent specified user(s) or groups from accessing confidential information such as a patient's chart.		
RSR 075	The EES should preserve and report specified audit data when potential security violations are detected.		
RSR 076	When access to a user's account is restricted, the EES shall provide a means for appropriately authorized users to "break the glass" and obtain access for emergency situations, as defined by Nebraska policy.		
RSR 077	When access to a chart is restricted and the "break the glass" has occurred, the EES shall provide the ability to notify specified users and provide an audit trail for this access.		
RSR 078	The EES shall enforce the most restrictive set of rights/privileges or accesses needed by users/groups or processes acting on behalf of users, for the performance of specified tasks.		
RSR 079	The EES shall provide the ability for authorized administrators to assign restrictions or privileges to users/groups.		
RSR 080	The EES shall support removal of a user's privileges without deleting the user from the EES to ensure history of user's identity and actions.		
RSR 081	The EES shall be able to support RBAC in compliance with the HL7 Permissions Catalog.		
RSR 082	The EES shall provide more-advanced session management abilities such as prevention of duplicate logins, remote logout and location-specific session timeouts.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
RSR 083	The EES shall provide the ability to perform EES administration functions such as reference table maintenance and adding/removing users from the system.		
RSR 084	The EES shall allow users access based on their roles irrespective of their geographical location.		
RSR 085	The EES shall provide the capability to integrate with existing authentication and authorization mechanisms (RACF on the mainframe).		
RSR 086	The EES shall provide the capability to create temporary and emergency accounts and terminate those accounts automatically after a user defined period of time.		
RSR 087	The EES shall provide the capability to override a role and restrict access to information by users or groups of users.		
RSR 088	The EES shall allow an individual with active eligibility under a different user ID to reapply under their own user ID.		
RSR 089	The EES shall provide the capability to monitor events on the information system, detect attacks, and provide identification of unauthorized use of the system.		
RSR 090	The EES shall provide the capability to identify and report on inappropriate access to information in the system, based on user defined criteria.		
RSR 091	The EES shall manage user profiles, including enforcing role-based security access to system data and functions.		
RSR 092	The EES shall enforce strong password rules per NITC & IRS requirements.		
RSR 093	The EES support the use of Multi-factor authentication		
RSR 094	The EES shall support the ability to disable user accounts and ensure no disabled accounts can log in or access the solution.		
RSR 095	The EES shall provide the same security provisions for all the environments as those used in the production environment.		
RSR 096	The EES shall support user account authentication procedures with configurable parameters (time, cipher strength, logon attempts, etc.).		
RSR 097	The EES shall 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 bank account numbers.		

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RSR 098	All sensitive data shall be encrypted in transit (including emails) to protect data confidentiality and integrity as appropriate based on the sensitivity of data.		
RSR 099	The EES shall provide the ability to implement security for transport and messaging via web services.		
RSR 100	The EES shall have the ability to support strong authentication through SSL, Kerberos, RADIUS, SAML, XACML, or OpenID.		
RSR 101	The EES shall provide the ability to virus scan uploaded files using Department approved virus scanning software.		
RSR 102	The EES shall provide the ability to administer user security based on organizational unit.		
RSR 103	The EES shall support the latest version of Secure Sockets Layer (SSL)/Transport Layer Security.		
RSR 104	The EES shall be able to use HTTPS/SSL for connections between interfaces.		
RSR 105	The EES shall 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.		
RSR 106	The EES shall pass tests for common web vulnerabilities such as poor session controls, injection flaws, denial of service, un-validated input, and cross site scripting.		
RSR 107	The EES shall manage user authentication and authorization via LDAP version 3.0 or higher.		
RSR 108	The solution shall contain verification mechanisms that are capable of authenticating authority (as well as identify) for the use or disclosure requested.		
RSR 109	The EES should provide role-based security using unique identifiers (IDs), mandatory password standards, and profile or group access assignments. All users should be authenticated when establishing a connection to the solution. Authentication should be based on unique user IDs and should support separation of duties based on roles.		
RSR 110	The EES shall enforce password policies for length, character requirements, forced reset intervals, and updates, as defined by the Department.		
RSR 111	The EES shall have the ability to use secure (SSL/SSH) FTP to accommodate file transfers.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
RSR 112	The EES shall ensure a timely and reliable process for security breach notification to the appropriate entity.		
RSR 113	The EES shall alert appropriate staff authorities of potential violations of privacy safeguards, such as inappropriate access to confidential information.		
RSR 114	The EES shall assure strict adherence to IRS security and privacy requirements for data obtained from IRS and the federal Data Hub.		
RSR 115	The EES shall adhere to all Nebraska and federal requirements to secure, store, and dispose of data.		
RSR 116	The EES shall provide complete control and accounting of all data received, stored, accessed, or transmitted to ensure administrative, physical, and technical security of the data		
RSR 117	The EES shall ensure the security of all State documents and data ensuring that complete segregation of the State data and files exists from other selected Contractors/selected Contractor customers.		
RSR 118	The EES shall offer the latest, commercially available and industry accepted encryption technologies for any file transfers or information exchanges within the solution network through the Internet and with any potentially unsecured network.		
RSR 119	The EES should implement a security architecture based on MITA 3.0 Security and Privacy model, including the following security architectural elements: <ul style="list-style-type: none"> - Multi-Level Security - Identity Management - Role Based Access Control (RBAC) - Decentralized Label Model (DLM) 		
RSR 120	The EES should support a defense-in-depth, multi-zone computing architecture that physically separates the layers between the solution components. Each layer should be protected by firewalls and appropriate security devices based on the sensitivity of data it houses and functions it performs.		
RSR 121	The EES should 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.		
RSR 122	The EES should support the saving of user profiles for archival purposes, including the ability to re-enable/reuse the profile.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
RSR 123	The EES should pass credentials for authentication and authorization from the 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).		
RSR 124	The EES 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).		
RSR 125	If a system component or application fails, the EES should not leave sensitive data accessible, and 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.		
RSR 126	The EES should have the ability to support robust session management controls, including the ability to limit the number of concurrent sessions for an individual user.		
RSR 127	The EES should ensure transactions and messages are accurately received as they were sent and information is not altered by non-authorized individuals.		
RSR 128	The EES should support the latest version of the IP Protocol Security extension (IPSec).		
RSR 129	The EES should support S/MIME for email communications.		
RSR 130	The EES should support cryptography levels set forth in FIPS 1402.		
RSR 131	The EES should prevent the creation of duplicate user accounts.		
RSR 132	The EES should use file encryption for data transfer between entities.		
RSR 133	The EES should provide the ability to create, display and maintain an administrative structure as specified by the Department.		
RSR 134	The EES should provide the ability to include a viewable online history of all changes made by User Account Managers as specified by the Department.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
RSR 135	The EES should prevent installation or use of remote control or file sharing software unless explicitly approved by the Department.		
RSR 136	The EES should detect and prevent hacking, intrusion, and other unauthorized use of system resources.		
RSR 137	The EES should provide procedures for guarding, monitoring and detecting malicious software.		
RSR 138	The EES should update virus blocking software daily and aggressively monitor for and protect against viruses.		
RSR 139	The EES should suspend all EES users who have not accessed the solution within a specified number of days as specified by the Department. The suspension requirements should be configurable and distinct for each system environment.		
RSR 140	The EES should provide screen/window security, including links that route to interfaces.		
RSR 141	The EES should provide a secure web portal with authentication and encryption to protect interactions and transactions including, at a minimum Secure Socket Layers (SSL).		
RSR 142	The EES should provide a secure web portal with role based access enabling viewing and maintenance of information across all components of the solution meeting all applicable Nebraska and federal standards.		
RSR 143	The EES should accommodate all current HIPAA revisions/updates including those that may occur during the life of the project.		
RSR 144	The EES should maintain all data sets defined by the HIPAA Implementation Guides to support all transactions required under HIPAA Administrative Simplification Rule.		
RSR 145	The EES should protect the confidentiality and integrity of electronic Protected Health Information (PHI).		
RSR 146	The EES should support encryption and decryption of stored PHI or an equivalent alternative protection mechanism, if approved by the Department.		
RSR 147	The EES should track disclosures of PHI; provide authorized users access to, and reports on the disclosures.		
RSR 148	The EES should include procedures for accessing necessary electronic PHI in the event of an emergency and continue protection of PHI in emergency.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
RSR 149	The EES should provide data integrity of PHI by preventing and detecting improper alteration or destruction (including but not limited to: message authentication, electronic signature, check sums etc.).		
RSR 150	The EES should perform data mapping to identify the PHI contained in the solution.		
RSR 151	The EES should provide ability to redact records in whole or in part to comply with Nebraska and federal privacy standards based on role and authority.		
RSR 152	The EES should provide audit reports for tracking users, associated security groups, roles, settings, passwords and duplicate IDs. The frequency and content of security audit reports will be determined by the Department.		
RSR 153	The EES should track adds, changes and deletes of individual user data.		
RSR 154	The EES shall audit/track all activity specific to each user and process, including at a minimum date and time of last login, invalid login attempts, system errors, and all transaction activities, including inquiry.		
RSR 155	The EES should provide read-only access to system job and maintenance schedule, submission, and processing statistics, and system performance tools for designated staff.		
RSR 156	The EES should monitor system activity and log and examine system activity in accordance with audit policies and procedures adopted by the Department.		
RSR 157	The EES should provide security administrative rights to the Department security administrator(s) for the purpose of adding, updating, and deleting security access.		

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7. Audit & Compliance Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
AUD 001	The EES shall maintain a record (e.g. audit trail) of all additions, changes and deletions made to data in the system. This should be readily searchable by user ID or client ID. This must include but is not limited to:		
AUD 002	<ul style="list-style-type: none"> • The user ID of the person who made the change 		
AUD 003	<ul style="list-style-type: none"> • The date and time of the change 		
AUD 004	<ul style="list-style-type: none"> • The physical, software/hardware and/or network location of the person while making the change 		
AUD 005	<ul style="list-style-type: none"> • The information that was changed 		
AUD 006	<ul style="list-style-type: none"> • The outcome of the event 		
AUD 007	<ul style="list-style-type: none"> • The data before and after it was changed, and which screens were accessed and used 		
AUD 008	The EES shall allow an authorized administrator to set the inclusion or exclusion of auditable events based on organizational policy and operating requirements/limits.		
AUD 009	The EES shall support logging to a common audit engine using the schema and transports specified in the Integrating the Healthcare Enterprise (IHE) Audit Trails and Node Authentication (ATNA) profile, Audit Log specification.		
AUD 010	The EES shall be able to detect security-relevant events that it mediates and generate audit records for them. At a minimum the events shall include those listed here:		
AUD 011	<ul style="list-style-type: none"> • start/stop 		
AUD 012	<ul style="list-style-type: none"> • user login/logout 		
AUD 013	<ul style="list-style-type: none"> • session timeout 		
AUD 014	<ul style="list-style-type: none"> • account lockout 		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
AUD 015	<ul style="list-style-type: none"> client record created/viewed/updated/deleted 		
AUD 016	<ul style="list-style-type: none"> scheduling 		
AUD 017	<ul style="list-style-type: none"> query 		
AUD 018	<ul style="list-style-type: none"> order 		
AUD 019	<ul style="list-style-type: none"> node-authentication failure 		
AUD 020	<ul style="list-style-type: none"> signature created/validated 		
AUD 021	<ul style="list-style-type: none"> Personally Identifiable Information (PII) export 		
AUD 022	<ul style="list-style-type: none"> PII import 		
AUD 023	<ul style="list-style-type: none"> security administration events 		
AUD 024	<ul style="list-style-type: none"> backup and restore 		
AUD 025	The EES shall provide authorized administrators with the capability to read all audit information from the audit records.		
AUD 026	The EES shall provide the audit records in a manner suitable for the user to interpret the information.		
AUD 027	The EES shall provide the capability to generate reports based on ranges of EES date and time that audit records were collected.		
AUD 028	The EES shall be able to export logs into text format in such a manner as to allow correlation based on time (e.g. Coordinated Universal Time [UTC] synchronization).		
AUD 029	The EES shall be able to perform time synchronization using NTP/SNTP, and use this synchronized time in all security records of time.		
AUD 030	The EES shall have the ability to format for export recorded time stamps using UTC based on ISO 8601.		
AUD 031	The EES shall prohibit all users read access to the audit records, except those users that have been granted explicit read access.		
AUD 032	The EES shall protect the stored audit records from unauthorized deletion.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
AUD 033	The EES shall prevent modifications to the audit records.		
AUD 034	The proposed EES shall provide logging, reporting and accessing errors and exceptions.		
AUD 035	The EES shall maintain an audit trail of all inquiry, and updates to the EES that are required by State and federal policies and regulations.		
AUD 036	The EES shall ensure plans and procedures are in place for all modules to meet audit and compliance requirements		
AUD 037	The EES should capture and retain the data that was used to determine eligibility, calculate benefits, and generate various outputs, 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.		
AUD 038	The EES should have the ability to research transaction exceptions (e.g. a failed "add" transaction due to business rule violation) and make corrections within the system as necessary to correct enrollment discrepancies.		

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8. Usability Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
USE 001	The EES will adhere to the accessibility standard as outlined in the web guidelines and based on the W3C level 2 accessibility guidelines: (http://www.w3.org/TR/WCAG10/full-checklist.html).		
USE 002	The EES shall adhere to all federal and Nebraska accessibility requirements, or their successors: (section 508 of the Rehabilitation Act and detailed in section 1194.22 of the Code of Federal Regulations, "Web-based intranet and internet information and applications").		
USE 003	The EES shall provide a user interface that shall be simple and consistent throughout all areas and functions of the EES.		
USE 004	The EES shall minimize the number of mouse clicks/user interaction to complete any action.		
USE 005	The EES shall use a Graphical User Interface (GUI) to help the user navigate to the next logical step in the workflow, or freely navigate to other parts of the EES functionality, and then allow the user to return to complete the in-process task.		
USE 006	The EES shall preserve context by limiting abrupt transitions and redispays in order to maximize and enhance the user experience and EES usability.		
USE 007	The EES shall speak the users' language, with words, phrases and concepts familiar to the user, rather than EES-oriented terms.		
USE 008	The EES shall follow real-world conventions, making information appear in a natural and logical order.		
USE 009	The EES shall allow the users to easily navigate to a variety of functions available to them without having to move sequentially through excessive menus and screens.		
USE 010	The EES shall support undo and redo, or provide onscreen confirmation/acceptance to the user to confirm a change that is permanent and cannot be "undone".		
USE 011	The EES shall provide users with a clearly marked "emergency exit" for the instances when a user mistakenly chooses a function and such "emergency exit" must be simple with minimal dialogue.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
USE 012	The EES shall follow standardized conventions and limit the use of words, situations, or actions that have multiple meanings.		
USE 013	The EES shall eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.		
USE 014	The EES shall minimize the user's memory load by making objects, actions, and options visible.		
USE 015	The EES shall provide the option to have rollover/ tool-tip help or context messages and provide the option to turn off this option in the user preferences profile.		
USE 016	The EES shall provide all user instructions in a visible or easily retrievable location, when appropriate.		
USE 017	The EES shall cater to both inexperienced and experienced users and shall provide accelerators (e.g. onscreen short cuts, hot-keys, alternate workflows, etc.) to speed up the interaction for the expert user.		
USE 018	The EES will allow users to create shortcuts (e.g. onscreen short cuts, hot-keys, etc.) for frequent actions.		
USE 019	The EES's error messages shall be expressed in plain language, precisely indicate the problem, and constructively suggest a solution.		
USE 020	The EES shall use colors to enhance user experience and EES usability while complying with all disability requirements notated elsewhere in these requirements.		
USE 021	The EES shall allow the user to navigate to any functional component from a client landing page.		
USE 022	The EES shall alert the user with information relevant to required next steps.		
USE 023	The EES shall provide drop down and list boxes for all key entry, and text entry will display existing values for selection (auto fill).		
USE 024	The EES shall accommodate point and click selection and check box entry for all relevant data entries to ensure that the user does not have to enter textual data that may already be available to the system.		
USE 025	The EES shall facilitate data entry and shall contain pop-up list boxes for all code fields in all processing windows and allow selection of the entry with use of hot keys.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
USE 026	The EES shall provide field level on-screen edits with limited user override capabilities.		
USE 027	The EES shall not show fields that are not accessible to a given user based on access rights, nor shall the EES show fields not in use.		
USE 028	The EES cursor shall automatically advance to the next logical input field when the maximum allowed numbers of characters have been entered for the keyed field.		
USE 029	The EES shall provide the option of having a selection from the drop down boxes automatically take the user to the next field.		
USE 030	The EES shall provide validation checks by methods described within policy, functional, and detailed requirements.		
USE 031	The EES shall identify invalid entries to the user as immediately as possible.		
USE 032	The EES shall provide the ability to suggest or automatically change entries that do not conform to data entry standards.		
USE 033	The EES shall be designed to include only the necessary information and functionality on screens and shall be based on the user's access level and the user's configuration.		
USE 034	The EES shall be designed to include logical transitions between screens and level of detail during navigation.		
USE 035	The EES shall provide templates for data entry with identified mandatory and optional data fields.		
USE 036	The EES shall allow incomplete data sets to be saved for completion of the workflow at a later time.		
USE 037	The EES shall highlight and flag required and incomplete data fields.		
USE 038	The EES shall include a graduated system of alert levels to allow users to determine urgency and relevancy.		
USE 039	The EES shall allow configuration of alerts by a user, for a user by a supervisor, and for a user by an EES administrator		
USE 040	The EES shall allow for the request of or entry of data from external devices (e.g. tablets, kiosks, barcode scanner, RFID scanner, speech).		
USE 041	The EES shall notify the user when a source system is unavailable/inoperable and notify user that any available information about the subject being viewed is as of certain time and date.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
USE 042	The EES's web interface shall be aligned with Web 2.0 design principles and best practices.		
USE 043	The EES shall not require users to reenter data due to validation errors if the systems can auto-correct based on the entered data or the user can navigate to the entry error to correct the entry.		
USE 044	The EES shall enable central workflow alerts and transactional status.		
USE 045	The EES shall centralize pending work items for the user as in a "work queue"		
USE 046	The EES shall have the capability to push messages to the intended workers without requiring them to specifically inquire for the data.		
USE 047	The EES shall provide linked access to help functions which contain the appropriate information and search of all help information from every window, based on user profiles.		
USE 048	The EES shall have the capability to capture a public benefit applicant's application in a disconnected/offline mode to be processed once a connection to the Internet is established		
USE 049	The EES shall utilize standard web browser-based technology with the ability to provide data over a web browser interface (i.e. HTML over HTTP).		
USE 050	The EES shall include the capability to encrypt the data communicated over the network via SSL (HTML over HTTPS).		

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9. Integrated Eligibility Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
IER 001	The EES shall have the capability of exchanging information with the legacy N-FOCUS system.		
IER 002	The EES shall have the capability to provide data and access to notifications to the Federal Facilitated Marketplace.		
IER 003	The EES shall have the capability to request and store data from federal Hub for a number of purposes including, but not limited to: updated Citizenship and Income verification.		
IER 004	The EES shall have the capability to request and store results of IRS service information.		
IER 005	The EES shall have the capability to request and store results of Equifax – TALX wage verification.		
IER 006	The EES shall have the capability to request and store results of verification service citizenship/lawful presence provided by CMS		
IER 007	The EES must be able to express eligibility determination business rules outside transactional system in the business rules engine implemented as part of the Nebraska EES.		
IER 008	The EES shall have the capability of exchanging eligibility information with the legacy N-FOCUS system.		
IER 009	The EES shall have the capability of exchanging eligibility information with the legacy MMIS.		
IER 010	The EES shall have the capability to provide results of eligibility determination to other systems.		
IER 011	The EES shall have the capability to provide data and access to notifications to other systems.		
IER 012	The EES shall have the capability to store results/client attestation of a number of factors including, but not limited to Native American Status, Residency, Incarceration Status, and Individual Exemption qualification.		
IER 013	The EES shall have the capability to store results of alternate client verifications for a number of items including, but not limited to income, Citizenship / Lawful presence		
IER 014	The services and consumers employed in the EES shall be loosely-coupled to ensure service logic can evolve while guaranteeing backwards compatibility to existing consumers.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
IER 015	The EES shall be able to interface with multiple state systems as well as external partner systems to allow interoperability as appropriate with outside entities and state agencies. (Real-time, near-time, batch)		
IER 016	The EES shall provide the ability to leverage the federal approach to verification from federal agencies such as the Internal Revenue Service, Department of Health and Human Services, and Department of Homeland Security to eliminate the independent establishment of those interfaces and connections at the Nebraska level.		
IER 017	The EES shall provide standard, secure, and configurable interfaces between all interfacing information sharing entities.		
IER 018	The EES shall provide the ability to support real-time automated data exchanges with internal systems to ensure that data is aligned.		
IER 019	The EES shall provide the ability to communicate the eligibility decision to other relevant systems.		
IER 020	The EES shall provide the ability to export an enrollment file to external entities as specified by the Department.		
IER 021	The EES shall provide the ability to export Medicaid benefits to the Nebraska MMIS.		
IER 022	The EES shall ensure that dates across Nebraska systems remain in synch (e.g., a case's closing or some other action).		
IER 023	The EES shall provide the ability for data and process integration between programs according to state and federal regulations as required.		
IER 024	The EES should expose a web service that allows other systems to submit requests to verify an individual's enrollment.		
IER 025	All web services used in the EES should be reusable as enterprise resources by systems external to the EES.		
IER 026	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.		
IER 027	The EES 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.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
IER 028	The EES should 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).		
IER 029	The EES should provide the ability to import data into the EES in multiple formats (e.g., csv, fixed length ASCII, tab-delimited).		
IER 030	The EES should provide the ability to automatically identify inconsistencies between the case record and information received from interfaces as specified by the Department.		
IER 031	The EES should support integration with Nebraska's current calendar and e-mail environment.		
IER 032	The EES should employ XML-based standards for communication and integration with other environments.		
IER 033	The EES should provide alerts to DHHS staff on status of interface data processing (e.g., when processing is completed or error occurs).		
IER 034	The EES should provide the ability to support Interfaces by exchanging information on schedule as specified by the Department.		
IER 035	The EES should provide the ability to automatically track inbound customer service interactions received through the IVR and/or interfaces based on program rules.		
IER 036	The EES should provide the ability to present a result list for data imports and exports (e.g., success or failure, time started, time completed).		
IER 037	The EES should provide the ability to restart an interface transmission from a specific point (e.g., restart at failed record, restart from beginning).		
IER 038	The EES should associate information received via interface with the line-of-business record which generated the information request.		
IER 039	The EES should support exchange of bulk data information to be printed and mailed.		

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10. EES Administration Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
ADM 001	The EES shall provide data archiving capabilities based on Department defined criteria.		
ADM 002	The EES shall provide the capability to move all historical, expired and/or unnecessary data to offline storage according to a set of business rules and schedule to be defined by the Department as a part of the ongoing system operational decision making.		
ADM 003	The EES shall maintain an archival process so that accumulated historical records and log files do not consume large amounts of disk space.		
ADM 004	The EES shall provide an auto archive/purge of the log files to prevent uncontrolled growth of the log and historical records storage using administrator-set parameters.		
ADM 005	The EES shall provide version control capabilities to ensure the integrity of all software releases.		
ADM 006	The EES shall monitor and provide reports on any unauthorized access.		
ADM 007	All EES communications shall be protected by at least 128-bit encryption.		
ADM 008	The EES shall be supported by public key/private key encryption Secure Socket Layer (SSL) certificates.		
ADM 009	The EES shall provide admin tools and maintenance routines to change access rights quickly.		
ADM 010	The EES shall use firewalls and Demilitarized Zones (DMZs) for external access and remote access.		
ADM 011	The EES shall allow EES administrators to create and manage user accounts.		
ADM 012	The EES shall allow EES administrators to assign status and permissions to user accounts.		
ADM 013	The EES shall allow EES administrators to create and manage user roles.		
ADM 014	The EES shall allow EES administrators to create user groups to manage workflow.		
ADM 015	The EES shall allow EES administrators to assign users to particular local offices.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
ADM 016	The EES shall allow EES administrators to assign users to particular user groups / units.		
ADM 017	The EES shall allow EES administrators to assign users to particular supervisors.		
ADM 018	The Contractor shall establish an automated maintenance routine that shall at a minimum: - backup the user IDs and password data - identify expired IDs and related data		
ADM 019	The Contractor shall use offsite storage. Data backup should be stored offsite in the event of a physical disaster		

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11. EES Management Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
MGT 001	The EES shall have the ability to generate administrative alerts and warnings when statistics indicate an impact or potential limits on EES component performance and availability. The specific alerts will be defined by the hosting services provider.		
MGT 002	The EES shall allow for all changes/updates to the distributed components to be administered and completed centrally and available immediately to all source systems and sites.		
MGT 003	The EES shall provide Service Level Requirements (SLR) monitoring and reporting capabilities. Service Level definitions will be drafted into a single document provided as an attachment.		
MGT 004	The EES shall securely support State's existing remote control (i.e. support personnel ability to take over the user device for troubleshooting and support) capabilities deployed for any type of client workstation.		
MGT 005	The EES shall provide event management and monitoring functionality according to Information Technology Infrastructure Library version 3 (ITIL v3) or equivalent best practices.		
MGT 006	The EES shall provide application performance monitoring and management capabilities (i.e. transaction monitoring, synthetic transactions, component root cause analysis)		
MGT 007	The EES shall provide transaction tracking and log consolidation capabilities across all tiers of the application		
MGT 008	The EES shall use automated application and network performance measuring tools for proactive system monitoring, tuning mechanisms, reporting, and trend analysis. Performance monitoring alerts shall be configurable and allow for user notification using multiple communication methods.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
MGT 009	The EES shall provide a custom report outlining system anomalies such as high levels of utilization, poor response times, large number of failed logins, and other abnormal activities, identified, repaired and resolved. This report's frequency shall be dictated by the number of anomalous activities. The report shall include specifics regarding the issues encountered, the measures taken to resolve the anomalies and the resources (EES Contractor, Department and third-party, as applicable) participating in the process.		
MGT 010	The EES shall provide a report reflective of system performance statistics. This performance statistics report shall be presented to the Department not less than monthly for the purposes of monitoring the Department's systems and network activity.		
MGT 011	The EES shall provide event and incident notification capabilities which can integrate with industry standard system management frameworks such as those provided by CA, IBM and Microsoft.		
MGT 012	The EES shall have the ability to capture and report on system utilization needed to allocate costs down to the user and transaction level.		
MGT 013	All performance and systems management functions shall be able to operate without degrading business systems response time.		
MGT 014	The EES shall 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.		
MGT 015	The EES shall provide the ability for system capacity monitoring including, but not limited to, server volume/capacity, and network volume/capacity.		
MGT 016	The EES shall have the ability to provide workload statistics (e.g., work-in-process, queues, waiting-for-resources).		
MGT 017	The EES shall have the ability to notify users, via multiple channels, when the measured performance is outside tolerances.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
MGT 018	The EES shall have the ability for users, upon notification of performance outside tolerance, to identify the cause of the performance issue.		
MGT 019	The EES shall have the ability to provide dashboard and other report types suitable for business activity monitoring including templates for common display types.		
MGT 020	The EES shall provide for and support the ability to control batch job execution by time of day, date, and processing cycle (weekly, monthly, yearly, quarterly, on request, etc.).		

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12. Enterprise Service Bus (ESB) Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
ESB 001	The EES shall provide reliable, once-only delivery of messages (guarantee of reliable and non-repetitive delivery).		
ESB 002	The EES shall have the ability to support varying message payloads, ranging from individual transactions to large files (more than 1GB) containing multiple transactions.		
ESB 003	The EES shall have the ability to track a message from its origin to its destination (inside a firewall), inquire on the status of that message and address exceptions (for example, resend the message if a target times out).		
ESB 004	The EES shall have the ability to use standards-based communication protocols, such as TCP/IP, HTTP, HTTP/S and SMTP.		
ESB 005	The EES shall have the ability to convert between the protocol native to the messaging platform and other protocols, such as Remote Method Invocation (RMI), IIOP and .NET remoting.		
ESB 006	The EES shall have features that enable in-flight message manipulation, such as transformation (typically XML-based), intelligent routing, naming and addressing.		
ESB 007	The EES shall have the ability to apply logic to the routing of messages, including support for the following file interaction styles:		
ESB 008	<ul style="list-style-type: none"> • Store and forward: Ability to persist a message and then send it to destinations. 		
ESB 009	<ul style="list-style-type: none"> • Publish/subscribe: Ability to distribute a message to multiple destinations based on a message attribute usually described as the subject area of the message. 		
ESB 010	<ul style="list-style-type: none"> • Request/reply: Ability to correlate asynchronous messages so that the target's response is associated with the appropriate request made by the source. 		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
ESB 011	<ul style="list-style-type: none"> Content-based: The ability to route a message based on a value or values within a message. For example, the ability to route a referral message whose target turnaround time is small to a different set of targets than a referral message whose turnaround time is high. 		
ESB 012	The EES shall provide for syntactic conversion and semantic transformation, including ease of use and reuse, number of built-in functions, ease of extending the transformation function with custom-coded logic and XML support (e.g. schema or Extensible Style sheet Language Transformations [XSLT]).		
ESB 013	The EES shall have the capability during operations, to assist service consumers by dynamically finding, binding to and invoking the execution of service providers.		
ESB 014	The EES shall provide the technology that combines design tools and runtime software to implement programs that act as "glue," transforming among protocols, connecting to databases and linking pre-SOA Application Programming Interfaces (APIs) to the SOA backplane. To support B2B projects, adapters also need to support SOA services using B2B protocols such as Applicability Statement 1 (AS1)/Applicability Statement 2 (AS2), RosettaNet and Electronic Data Interchange for Administration, Commerce and Transportation (EDIFACT).		
ESB 015	The EES shall support the industry-standards messaging and interfaces relevant to health and human services organizations including, but not limited to: - Health Level Seven (HL7) Versions 2.x, 3.x, and CCD - Integrating the Healthcare Enterprise (IHE) XD* Profiles		
ESB 016	The EES shall provide the technology that hosts the execution of process logic spanning multiple back-end services or applications - typically for short-term (seconds or minutes) processes that can occasionally also be long term (hours, days, weeks) - with the aim of implementing composite services or automated EES-to-EES processes. Features include:		
ESB 017	<ul style="list-style-type: none"> Graphical design surface for specifying process flows 		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
ESB 018	<ul style="list-style-type: none"> • Support for standard specification languages including Business Process Modeling Notation (BPMN) 		
ESB 019	<ul style="list-style-type: none"> • Support for standard representations including Business Process Execution Language (BPEL), XML Process Definition Language (XPDL), Business Process Modeling Language (BPML) and Web Services Flow Language (WSFL) 		
ESB 020	<ul style="list-style-type: none"> • Ability to specify compensating transactions and execute those transactions upon failure of the process flow 		
ESB 021	<ul style="list-style-type: none"> • Integration with workflow 		
ESB 022	The EES shall provide the technology to perform syntactic and semantic hub-based transformation of messages, including:		
ESB 023	<ul style="list-style-type: none"> • Support of taxonomy 		
ESB 024	<ul style="list-style-type: none"> • Support of ontology 		
ESB 025	<ul style="list-style-type: none"> • Reusable transformation maps 		
ESB 026	<ul style="list-style-type: none"> • Built-in transformation functions 		
ESB 027	<ul style="list-style-type: none"> • Extending the transformation function with custom-coded logic 		
ESB 028	<ul style="list-style-type: none"> • Support B2B project translation including Electronic Data Interchange (EDI), RosettaNet, HL7, etc. 		
ESB 029	The EES shall provide the functionality that provides reliability for applications, services or message flows:		
ESB 030	<ul style="list-style-type: none"> • Load balancing 		
ESB 031	<ul style="list-style-type: none"> • High availability 		
ESB 032	<ul style="list-style-type: none"> • Fault tolerance 		
ESB 033	<ul style="list-style-type: none"> • Failover 		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
ESB 034	<ul style="list-style-type: none"> In-order delivery 		
ESB 035	<ul style="list-style-type: none"> Transaction support 		
ESB 036	<ul style="list-style-type: none"> Execution prioritization 		
ESB 037	<ul style="list-style-type: none"> Message prioritization 		
ESB 038	<ul style="list-style-type: none"> Downstream throttling 		
ESB 039	The EES shall provide the functionality used to monitor the operation of the overall system (services, applications, processes and application infrastructure), and to collect events and usage information aimed at populating technical KPIs of the deliverables supported by the SOA backplane and of the SOA backplane components by monitoring and collecting metrics for:		
ESB 040	<ul style="list-style-type: none"> Messaging traffic 		
ESB 041	<ul style="list-style-type: none"> Process state and behavior 		
ESB 042	<ul style="list-style-type: none"> Application and service parameters and behavior for all nodes in a LAN or WAN 		
ESB 043	The EES must provide for any combination of Alert Destinations such as Email, JMS, SNMP, reporting services, and server logs. The alerts shall be customizable with respect to the frequency of the alert, the ability to enable/disable an alert, rule expiration dates, starting and ending times for an alert, and customizable conditions for an alert".		
ESB 044	The EES shall provide the tools and technologies required to implement the necessary control access to the services and the connected resources (for example, other services and databases), as well as the SOA backplane functionality. Capabilities include:		
ESB 045	<ul style="list-style-type: none"> Authentication 		
ESB 046	<ul style="list-style-type: none"> Authorization 		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
ESB 047	<ul style="list-style-type: none"> • Encryption/decryption 		
ESB 048	<ul style="list-style-type: none"> • Digital signatures 		
ESB 049	<ul style="list-style-type: none"> • Credential mapping 		
ESB 050	The EES shall provide the functionality to assist Department's operations personnel in keeping the resultant system (applications, services and infrastructure) running at peak efficiency at all times, including:		
ESB 051	<ul style="list-style-type: none"> • Establishing rules for automated system monitoring 		
ESB 052	<ul style="list-style-type: none"> • Establishing network-alert-based management 		
ESB 053	<ul style="list-style-type: none"> • Supporting autonomous network behavior so local management and problem resolution can continue during an outage 		
ESB 054	<ul style="list-style-type: none"> • A console that enables domain-specific display for multiple devices 		
ESB 055	The EES shall provide the technology that manages the metadata and provides the features needed to support the reliable operation of services. Examples include:		
ESB 056	<ul style="list-style-type: none"> • Online catalog of services and associated artifacts such as WSDL files, XSDs, BPEL files 		
ESB 057	<ul style="list-style-type: none"> • A single point of controlled access for cataloging, promoting, publishing and searching for information about managed assets 		
ESB 058	<ul style="list-style-type: none"> • Metadata that enables an ESB to find, bind to and invoke the execution of a service implementation 		
ESB 059	<ul style="list-style-type: none"> • Support for extending existing asset types and defining and populating custom asset types 		
ESB 060	The EES shall provide support for building frameworks and extensible tools that enable the design, configuration, assembly, deployment, monitoring, and management of software designed around an SOA.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
ESB 061	The EES shall provide assistance for deploying applications with SOA and event-driven architecture in a manner that supports the following implementation strategies:		
ESB 062	<ul style="list-style-type: none"> • Web Services: Web Services Interoperability (WS-I) Organization-compliant implementation of basic Web services standards, including SOAP, WSDL and Universal Description, Discovery and Integration (UDDI), as well as higher-level Web services standards, such as WS-Security. 		
ESB 063	<ul style="list-style-type: none"> • Representational State Transfer (REST): Support for XML-based message processing as well as HTTP, and XHTML. 		
ESB 064	The EES shall support Transport Security, Message Security, WS-Security, SAML architecture, and WS-Policy.		
ESB 065	The EES shall implement the ability to externalize security by using a third-party security infrastructure whereby the ESB's proxy action calls a third-party for user/role information.		
ESB 066	The EES shall provide the technology to implement processing logic that directly manipulates data values, and the representation of those values for storage, transport or presentation purposes to establish common access to data sources (structured and unstructured), improve data quality or federate data from multiple sources.		
ESB 067	The EES shall provide the tooling that enables the recording (storage) or retrieving (reading) of information (data) from data stores. An example is distributed query functionality that parses incoming queries into sub queries and the execution of those sub queries, via the connectivity layer, against the respective sources where the desired data resides.		
ESB 068	The EES shall provide the data infrastructure tooling that enables users to represent semantic models, identify model-to-model relationships, and execute the necessary translations to reconcile data with differing semantic models.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
ESB 069	The EES shall provide optimization services that continuously read various types of metadata from across the architecture. The optimization verbs shall use the semantic/logical services to reconcile context to data content and deliver against some aspect of the application service-level agreement (requirements for data quality, data freshness, data volumes, throughput parameters, data-mining results, on-demand data aggregation or summarization, data enrichment, and many others).		
ESB 070	The EES shall provide tooling that supports data profiling: the process of examining the data available in an existing data source (for example, a database or a file), and collecting statistics and information about that data.		
ESB 071	The EES shall provide a modeling environment to support the roles of the business analyst, process architect, EES architect and developer.		
ESB 072	The EES shall support individual and group teamwork at design time and runtime.		
ESB 073	The EES must incorporate the ability to undo changes, detect and resolve conflicts, test service connectivity with tracing information, easily enable/disable services, provide logging and view all session activities/change history attributable to each logged in user.		
ESB 074	The EES must incorporate Role/Group-based rights for the management of the ESB across the environments.		
ESB 075	The EES shall have the ability to automatically manage complex workflow patterns that are system-based, human-based, or a mixture of both.		
ESB 076	The EES shall have the ability to design workflows, preferably using Business Process Model and Notation (BPMN).		
ESB 077	The EES shall provide the ability to schedule events (e.g., reminders, notification generation, business process execution, etc.).		
ESB 078	The EES shall provide the ability to associate the scheduled event with a system record (e.g., case record to an event).		
ESB 079	The EES shall provide the ability to attach documentation to the scheduled event.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
ESB 080	The EES shall provide the ability to notify a user of a scheduled event based on user-defined criteria (e.g., reminder time, delivery mechanism).		
ESB 081	The EES shall provide the ability to modify existing scheduled events (e.g., begin date, end date, frequency, and business process specific information).		
ESB 082	The EES shall have the ability to monitor and manage executing processes, including the capability to override workflows and business rules by authorized users.		
ESB 083	The EES shall provide the ability to suspend a scheduled event.		
ESB 084	The EES shall provide the ability to cancel a scheduled event.		
ESB 085	The EES shall provide the ability to route imaged correspondence to any work queue.		
ESB 086	The EES shall provide the ability to maintain historical information related to scheduled events.		
ESB 087	The EES shall provide the ability to maintain user-defined calendars and dates specific to business functionality (e.g., time off, work hours, review dates).		
ESB 088	The EES shall provide the ability to associate comments with scheduled events.		
ESB 089	The EES should have the ability to import and export process designs using an industry standard format, such as Business Process Execution Language (BPEL) or XML Process Definition Language (XPDL).		

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13. Data Integration & ETL Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
ETL 001	The EES shall have the ability to convert message formats and translate coded data within messages.		
ETL 002	The EES shall provide support for a metadata repository for data and message conversion and transformations.		
ETL 003	The EES shall at a minimum support the following standards:		
ETL 004	<ul style="list-style-type: none"> • Integrating the Health Enterprise (IHE): Cross-Enterprise Document Sharing (XDS); Cross-Community Access (XCA) 		
ETL 005	<ul style="list-style-type: none"> • Health Level Seven (HL7) Continuity of Care Document (CCD) C32 profile 		
ETL 006	<ul style="list-style-type: none"> • ONC Direct Project 		
ETL 007	The EES shall provide the technology to implement processing logic that can manipulate data values, and the representation of those values for transport or conversion purposes.		
ETL 008	The EES shall provide tools for data source connectivity: Adapters for a range of source types beyond RDBMS' and legacy databases (access to data stored in non-relational structures - for example, VSAM files and IMS databases), including packaged applications and Web services, the ability to access semi-structured and unstructured data (such as e-mail, websites, office productivity tools, content repositories and rich media) and the ability to interpret (as a source) XML structures.		
ETL 009	The EES shall provide tools to support the Extract-Transform-Load (ETL) process that involves:		
ETL 010	<ul style="list-style-type: none"> • Extracting data from data sources 		
ETL 011	<ul style="list-style-type: none"> • Transforming it to fit business needs (which can include quality levels). 		
ETL 012	<ul style="list-style-type: none"> • Loading it into the target data store 		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
ETL 013	<ul style="list-style-type: none"> Caching: The ability to cache federation results and various subsets of the source data to improve performance in situations where source data volumes are large; therefore, retrieving all data required for integration directly from the source is not feasible. 		
ETL 014	<ul style="list-style-type: none"> Verbose ETL process logging to allow for ease of support and debugging. 		
ETL 015	The EES shall have the ability to load data in a variety of approaches including (but not limited to) the following:		
ETL 016	<ul style="list-style-type: none"> Bulk data extraction and loading 		
ETL 017	<ul style="list-style-type: none"> Granular trickle-feed acquisition and delivery 		
ETL 018	<ul style="list-style-type: none"> Changed-data capture (ability to identify and extract modified data) 		
ETL 019	<ul style="list-style-type: none"> Event-based acquisition (time-based or data-value-based) 		
ETL 020	The EES shall include the following types of transformation:		
ETL 021	<ul style="list-style-type: none"> Simple transformations such as data-type conversions, string manipulations and Simple calculations 		
ETL 022	<ul style="list-style-type: none"> Moderate-complexity transformations, such as lookup and replace operations, aggregations, summarizations, deterministic matching and management of slowly changing dimensions 		
ETL 023	<ul style="list-style-type: none"> Higher-order transformations, such as sophisticated parsing operations on free-form text and rich media 		
ETL 024	<ul style="list-style-type: none"> Facilities for developing custom transformations and extending packaged transformations 		
ETL 025	The EES shall provide tools that enables the recording (storage) or retrieving (reading) of information (data) from data stores. An example is distributed query functionality that parses incoming queries into sub-queries and the execution of those sub-queries, via the connectivity layer, against the respective sources where the desired data resides.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
ETL 026	The EES shall comply with all relevant HIPAA standards, including national standards for electronic health care transactions and code sets, unique employee and provider identifiers, and security and privacy of individually identifiable health information (called "protected health information" or PHI).		

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14. Master Data Management Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
MDM 001	The EES shall have the capability to support the global identification, linking and/or synchronization of client and provider information across heterogeneous data sources through semantic reconciliation of master client and master provider data.		
MDM 002	The EES shall create and manage a central, database-based EES or index of record for master client (i.e. Master Client Index [MCI]) and master provider (i.e. Master Provider Index [MPI]) data.		
MDM 003	The EES shall enable the delivery of a single client and a single provider view for all stakeholders.		
MDM 004	The EES shall support ongoing client and provider data stewardship and governance requirements through monitoring of policy decisions and corrective action.		
MDM 005	The EES shall track and maintain detailed records on all changes via interfaces and authoring to support audit requirements.		
MDM 006	The EES must include a flexible data model that can model the complex relationships between the internal application sources inside Nebraska, its trading partners, clients and providers, as well as intermediaries and other parties, with the ability to handle complex hierarchies.		
MDM 007	The EES's data model must be capable of handling at least the following categories of elements for clients and providers:		
MDM 008	<ul style="list-style-type: none"> • Identification 		
MDM 009	<ul style="list-style-type: none"> • Demographics 		
MDM 010	<ul style="list-style-type: none"> • Contact information 		
MDM 011	<ul style="list-style-type: none"> • Relationships with other entities / providers 		
MDM 012	<ul style="list-style-type: none"> • Interactions with other entities / providers 		
MDM 013	The EES shall include data modeling capabilities that will be configurable, customizable, extensible, and upgradable.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
MDM 014	The EES data model must be able to support Nebraska's standards for data content and coding where they exist.		
MDM 015	The EES data model must be expressed using commonly accepted logical data model conventions with associated metadata.		
MDM 016	The EES shall have strong facilities, in batch and real-time mode, for profiling, cleansing, matching, linking, identifying and semantically reconciling master client and master provider data in different data sources to create and maintain golden records.		
MDM 017	The EES's business rules and associated metadata related to data cleansing shall be sufficiently visible to satisfy any audit requirements.		
MDM 018	The EES shall include the ability to review data quality metrics and track corrective actions.		
MDM 019	The EES shall provide dynamically configurable rules for comparing and reconciling semantics across data sources, matching (both probabilistic and tunable) across changing demographic data structures, linking data, and managing the merging and unmerging of client and provider records with full auditability and survivability.		
MDM 020	Where data is matched by a proxy rather than the actual identifier (e.g. client or provider ID) the EES shall load data no less quickly, efficiently or accurately.		
MDM 021	The EES shall include integration middleware to provide a communication backbone for the bidirectional flow of client and provider data between the central repository and the spoke solutions, and/ or remote applications.		
MDM 022	The EES shall provide tools to validate and manage all client and provider addresses to include all address types (mailing, residential, etc.).		
MDM 023	The EES shall be able to leverage a range of middleware products to data sources, including all Nebraska and trading partner data sources, and expose Healthcare industry-standard interfaces.		
MDM 024	The EES shall support integration with different latency characteristics and styles (e.g. real-time, batch).		
MDM 025	The EES shall support integration with downstream Business Intelligence (BI) and analytical requirements.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
MDM 026	The EES shall provide flexible and comprehensive workflow capabilities to enable business users and client and provider data managers to collaborate effectively in the authoring and management of client and provider data across the multiple source systems.		
MDM 027	The EES shall include facilities for managing and controlling access to client and provider data in the MDM such as reporting on MDM activities.		
MDM 028	The EES shall have the ability to integrate the data within the MDM with management and security tools.		
MDM 029	The EES shall manage the policies and rules associated with privacy access rights.		
MDM 030	The EES shall configure and manage differing visibility rules, providing different views for different roles.		
MDM 031	The EES shall integrate with the Department's Active Directory to provide authorization, e.g., role-based security.		
MDM 032	The EES shall provide analytics and performance measures related to the range of processes and activities taking place within the MDM; from the running of batch data loads and the execution of workflows against benchmarks to the quality of active client and provider data in the MDM.		
MDM 033	The EES shall include status and management tools for the data stewards to monitor to-do lists to ensure effective action takes place across the management of the master client and master provider data.		
MDM 034	The EES shall include solution-wide meta models to help identify what users, roles, applications and systems are responsible for which client and provider data.		
MDM 035	The EES shall provide workflow services for remediation of quality issues in client and provider data.		
MDM 036	The EES shall include business rules services to interrogate which rules are used by MDM by frequency and preference and to provide suggested enhancements to such business rules.		
MDM 037	The EES shall be based on up-to-date, mainstream technologies, and capable of flexible and effective integration with a wide range of other application and infrastructure platform components (whether from the same Contractor or not) that will be deployed by Nebraska.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
MDM 038	The EES shall protect and complement the data layer with a layer of business services for accessing and manipulating the client and provider data that is built for an SOA environment, by exposing web services interfaces.		
MDM 039	The EES shall be capable of flexible configuration into a range of architectural styles in terms of instantiation, latency and use of client and provider data to enable different deployment scenarios, such as the consolidation, registry, coexistence and centralized scenarios.		

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15. Consent Management Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
CMT 001	The EES shall be interoperable/Contractor agnostic.		
CMT 002	The EES shall support break-the-glass/ override access for emergency data access per HIPAA.		
CMT 003	The EES shall provide an alert mechanism for privacy breaches.		
CMT 004	The EES shall be non-disruptive to worker workflow.		
CMT 005	The EES shall be centralized to consistently enforce policies network-wide.		
CMT 006	The EES shall enable all applications to support consumer consent.		
CMT 007	The EES shall accommodate granular directives.		
CMT 008	The EES shall audit all access to protected information in real time.		
CMT 009	The EES shall provide an alert mechanism for privacy breaches or when HIPAA break-the-glass or override functions are enacted.		
CMT 010	The EES shall be highly flexible to meet changing requirements.		
CMT 011	The Department has a strong preference to use a COTS product to provide the consent management required for the EES.		
CMT 012	The EES shall have the consent service tied into role-based access control system for real-time permissions access-granting/removal/denial.		
CMT 013	The EES shall provide extensive search and reporting capabilities on any consent audit event data.		
CMT 014	The EES shall maintain historical record of consent/removal of consent.		

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16. Business Intelligence and Reporting Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
BIR 001	The EES shall provide the ability to impose graduated access to reports based on user role and agency requirements/permissions to better analyze program data.		
BIR 002	The EES's business intelligence and reporting capabilities must be scalable to accommodate changes in EES scale including changes in user population, transaction volume, throughput and geographical distribution while maintaining the agreed service levels.		
BIR 003	The EES shall have a mechanism to share specific data (e.g. limited data sets, detailed data at the level of the individual but with the data anonymous and completely de-identified, etc.) in a controllable fashion with other State and local agencies.		
BIR 004	The EES shall be extensible and have a scalable data architecture incorporating State and external data.		
BIR 005	The EES shall provide a tool to allow predictive modeling and analysis utilizing production data and coexist and integrate with tools such tools as SPSS and SAS.		
BIR 006	The EES shall provide the ability for user to create and customize reports, queries, and dashboards.		
BIR 007	The EES shall provide scalable architecture and support designs that will provide flexibility to add more data fields and change granularity level efficiently as analytic demand matures and expands.		
BIR 008	The EES shall have the ability for logical and physical view creation and storage.		
BIR 009	The EES shall support designs that facilitate a single view of business data.		
BIR 010	The EES shall support OLAP database structure for use in analytics and business intelligence to include ROLAP or MOLAP processing.		
BIR 011	The EES shall support hierarchical drill up/down; ad-hoc query; multi-dimensional tables and views.		
BIR 012	The EES shall provide the ability to support data mining functions.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
BIR 013	The EES shall provide the ability to perform in-database analytics.		
BIR 014	The EES shall offer options to use Database Management EES (DBMS)-integrated data integration tool and/or third party Contractor integration tool.		
BIR 015	The EES shall support fast large volume data loading and shall have the ability to capture real-time data.		
BIR 016	The EES shall have the ability to capture delta of changes to data from diverse systems and populate them to Shared Analytics.		
BIR 017	The EES shall provide the ability to capture and load data via SOA-based services and the ability to schedule data integration and load jobs.		
BIR 018	The EES shall include the ability to facilitate design and construction of data integration processes.		
BIR 019	The EES shall provide the ability to create custom transformations and the ability to group and reuse mapping and transformation operations.		
BIR 020	The EES shall provide comprehensive metadata management from source to target.		
BIR 021	The EES shall provide single repository for metadata, such as mappings of business concepts to underlying data structures, business glossary, data lineage, reference data, and objects (e.g. view, table, join) and reports from source to target.		
BIR 022	The EES shall provide the ability to import metadata from tools and data sources.		
BIR 023	The EES shall provide data quality tools and/or support 3rd party data quality tools for data profiling, cleansing and monitoring.		
BIR 024	The EES shall produce metadata and/or data dictionaries in a format that the Department can consume, e.g., Word, Excel, PDF, OF, etc.		
BIR 025	The EES shall be highly available via various mechanisms, e.g. data marts, data replication, clustering and backup configuration.		
BIR 026	The EES shall support reorganization of databases, indexes and configurations online without the need for the EES to shut down.		
BIR 027	The Contractor shall release upgrades and patches that shall be applied with minimal loss of system availability during production hours.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
BIR 028	The EES shall allow data loading to support environments with small or no window where system is down when loading data.		
BIR 029	The EES shall provide standards based connectivity including Open Database Connectivity (ODBC), Java Database Connectivity (JDBC), Web Services (WS) and others.		
BIR 030	The EES shall have no limit on the size of data types (including CHAR, NUM, CLOB, BLOB and XML) that are less than that of the manufacturer-known and published limits of the underlying DBMS.		
BIR 031	The EES shall have no limits on the size of tables, indexes and other database-level objects that are less than that of the manufacturer-known and published limits of the underlying DBMS.		
BIR 032	The EES shall support both horizontal and vertical scaling.		
BIR 033	The EES shall have an option for fast loading of data into the database. Where necessary this will include minimal relaxation of quality and integrity constraints and mechanisms for carrying out data quality checks as the final stage in the process.		
BIR 034	The EES shall provide for expansion of data storage as needed to accommodate increased volume of data based on approved Capacity Plans by the Department.		
BIR 035	The EES shall be American National Standards Institute (ANSI) Structured Query Language (SQL) Compliant. (Contractor needs to specify version of SQL compliance – e.g. 2003, 2006, 2008).		
BIR 036	The EES shall be XQuery 1.0 standard compliant.		
BIR 037	The EES shall support industry standards for electronic data exchange.		
BIR 038	The EES shall provide flexibility in using public/private cloud versions of the DBMS as an option to provide cost-effective scalability as needed.		
BIR 039	The EES shall run on and be portable across multiple Contractors' hardware and operating systems (e.g. IBM, HP, and Dell hardware, AIX, Linux, and Windows Operating Systems and VMware)		
BIR 040	The EES shall make an underlying DBMS available as a data warehouse appliance so it is also available as a standalone query-able DBMS.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
BIR 041	The EES shall support major application development interfaces (e.g. .NET interface, Java 2 Platform, Enterprise Edition [J2EE]).		
BIR 042	The EES shall support various database connectivity protocols (e.g. ODBC, JDBC, etc.)		
BIR 043	The EES shall support all connections required for BI analysis and reporting tools and ETL tools.		
BIR 044	The EES shall support stored procedures and extensions.		
BIR 045	The EES shall not employ triggers or cursors.		
BIR 046	The EES shall support native geo-spatial data types.		
BIR 047	The EES shall provide DBA tools for monitoring and administering DBMS and contain tools to manage the storage devices.		
BIR 048	The EES shall have built-in utilities to the DBMS to automate the normal day-to-day DBA operations (e.g., automated index rebuilding, free space reclamation and block reorganization).		
BIR 049	The EES shall provide the ability to:		
BIR 050	<ul style="list-style-type: none"> • prioritize workload executions and ensure quality-of-service; 		
BIR 051	<ul style="list-style-type: none"> • partition indexing and aggregate management via parameters and tools; 		
BIR 052	<ul style="list-style-type: none"> • simulate the various workloads and mixes 		
BIR 053	The EES shall provide workflow and collaboration support for administrator tasks.		

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17. Rules Engine Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
RLE 001	The EES shall support data verification and consistency checks.		
RLE 002	The EES shall support compute values based on input data.		
RLE 003	The EES shall support the selection of business process path.		
RLE 004	The EES shall support mechanisms and ease of use for users to edit rules while maintaining compliance with CMS rules.		
RLE 005	The Contractor must follow all standards defined by CMS in Guidance for Exchange and Medicaid Technology Systems and Enhanced Funding Requirements: Seven Conditions and Standards; and other federal guidelines yet to be defined; including use a technology neutral rules repository.		
RLE 006	The EES shall support design for a multi-step decision.		
RLE 007	The EES shall have the ability to tune individual steps in the overall decision process for maximum performance by the execution engine.		
RLE 008	The EES shall support reporting requirements either natively or integrate with other reporting tools to provide reporting.		
RLE 009	The EES shall support repository infrastructure for rule storage and versioning.		
RLE 010	The EES shall support seamless and easy user interaction.		
RLE 011	The EES shall provide context sensitive help and extensive documentation.		
RLE 012	The Rules Engine must be able to submit business rules to a federal repository at such time as the repository exists.		
RLE 013	The EES shall support high performance and scalability, including the following characteristics:		
RLE 014	<ul style="list-style-type: none"> • High performance for large rule bases (more than 20,000 rules) 		
RLE 015	<ul style="list-style-type: none"> • Ability to share rule sets across multiple engines 		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
RLE 016	<ul style="list-style-type: none"> Dynamic and static execution versions for performance 		
RLE 017	<ul style="list-style-type: none"> Multiple, cross-platform support 		
RLE 018	<ul style="list-style-type: none"> Segmented repositories 		
RLE 019	<ul style="list-style-type: none"> Pre-built rule paths 		
RLE 020	<ul style="list-style-type: none"> Rule pre-fetch to memory 		
RLE 021	<ul style="list-style-type: none"> Parallel rule search 		
RLE 022	<ul style="list-style-type: none"> Ability to compile rule sequences into base languages like C++, Java and C# 		
RLE 023	The EES shall support advanced inference features, including:		
RLE 024	<ul style="list-style-type: none"> Truth maintenance to support parallel rule execution 		
RLE 025	<ul style="list-style-type: none"> Inductive and deductive problem sets supported 		
RLE 026	<ul style="list-style-type: none"> Recursive rules supported 		
RLE 027	<ul style="list-style-type: none"> Rule aggregation supported 		
RLE 028	<ul style="list-style-type: none"> Links to simulation capabilities 		
RLE 029	<ul style="list-style-type: none"> Agent or daemon links 		
RLE 030	<ul style="list-style-type: none"> Object inheritance supported 		
RLE 031	<ul style="list-style-type: none"> Multiple-engine support 		
RLE 032	The EES shall include rule management features for the execution engine, including:		
RLE 033	<ul style="list-style-type: none"> Rule extensibility 		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
RLE 034	<ul style="list-style-type: none"> Rule mapping to owners and stewards 		
RLE 035	<ul style="list-style-type: none"> Rule change impact analysis purposes 		
RLE 036	<ul style="list-style-type: none"> Integration/coordination of distributed rule engines with a corporate "master" 		
RLE 037	<ul style="list-style-type: none"> Ability to rerun the engine for a point which has passed (for example, after 1 January, still able to rerun year-end jobs with 31 December rules) 		
RLE 038	<ul style="list-style-type: none"> Ability to enter new rules or changes to become effective on a future date (for example, ability to put in the rule changes for 1 January in December) 		
RLE 039	<ul style="list-style-type: none"> Rule consistency/collision checks 		
RLE 040	<ul style="list-style-type: none"> Rule versioning 		
RLE 041	<ul style="list-style-type: none"> Release versioning and rollback 		
RLE 042	<ul style="list-style-type: none"> Rule security 		
RLE 043	The EES shall include a rule repository for global rule management, including:		
RLE 044	<ul style="list-style-type: none"> nomadic support 		
RLE 045	<ul style="list-style-type: none"> an extensible meta model 		
RLE 046	<ul style="list-style-type: none"> rule merge support 		
RLE 047	<ul style="list-style-type: none"> versioning/lockout 		
RLE 048	<ul style="list-style-type: none"> rule promotion 		
RLE 049	<ul style="list-style-type: none"> change management 		
RLE 050	<ul style="list-style-type: none"> electronic rule distribution (publish or subscribe) 		
RLE 051	<ul style="list-style-type: none"> security 		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
RLE 052	The EES shall support ease of use in operation/development and administration, including:		
RLE 053	<ul style="list-style-type: none"> • Rule-firing audit report capabilities 		
RLE 054	<ul style="list-style-type: none"> • Rule views by project or role 		
RLE 055	<ul style="list-style-type: none"> • Ability to be used as a wizard/plugin for multiple development environments 		
RLE 056	<ul style="list-style-type: none"> • Dynamic rule change supported 		
RLE 057	<ul style="list-style-type: none"> • Rules separated from the engine 		
RLE 058	<ul style="list-style-type: none"> • Constraints naturally supported 		
RLE 059	The EES will include the capability to save and retrieve partial user sessions.		
RLE 060	The EES shall provide the capability to associate effective dates with each program and rule in the rules engine.		
RLE 061	The EES shall provide the capability to associate a rule with multiple program profiles.		
RLE 062	The EES shall provide the capability to identify and apply a rule change appropriately to existing cases.		
RLE 063	The EES shall provide the capability to copy an existing rule to create a new rule.		
RLE 064	The EES shall provide the ability to identify all other rules that are dependent on a specific rule by allowing rules association.		
RLE 065	The EES shall provide the capability to generate and display a flow chart of each program profile.		
RLE 066	The EES shall provide the ability to maintain and display the history of each rule change in the rules engine to show previous versions of the rule, a timestamp of when the change was made and the ID of the user making the change.		
RLE 067	The EES shall provide the capability to add additional table-driven variables to support new regulations using a rules engine.		
RLE 068	The EES shall include an automated rule build capability for rule repository propagation through the environments Development, Integration/Test, User Acceptance Testing and Production.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
RLE 069	The EES shall have the ability to expose sets of interrelated rules in the rules repository as either a web service and/or in an interactive, web-based interview format.		
RLE 070	The EES shall have the ability to create customizable web-based, interview sessions based on defined rule sets.		
RLE 071	The EES must facilitate the creation and maintenance of rules referencing complex data relationships this will include, but not be limited to, rules referencing complex many-to-many relationships between entity types		
RLE 072	The EES must have the ability for text documentation and meta-data to be included as part of the rules repository.		
RLE 073	The EES will have documentation to assist rule authors and administrators with best practices for rule repository creation and maintenance, repository check-in/checkout, repository promotion across environments.		
RLE 074	The Contractor shall partner with the Department management and Rule Author(s) to design suitable policy models for Eligibility Determination and other rules to be automated using the proposed Rules Management System.		
RLE 075	The Contractor shall transform all of the state's Medicaid eligibility program rules into a format that can be consumed by the proposed Rules Management System.		
RLE 076	The Contractor shall create the program rules in the proposed Rules Management System and test them in an established environment.		
RLE 077	The Contractor shall create a valid set of rules to transition from the current mainframe system to the proposed Rules Management system in preparation for the new SOA system.		
RLE 078	The Contractor rules management team will work with and mentor the Department staff Rule Author(s) in the best practices of: - Converting rules from federal or legislative documents into properly structured rules that can be consumed by the proposed Rules Management System and writing future rules in such a way that eases the transition - Capturing meta-data about each of the rules sets and how they function		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
RLE 079	<p>The Contractor shall provide guidance on:</p> <ul style="list-style-type: none"> - How best to store and look up the meta-data - Defining the Lifecycle of rule sets - How to integrate or flow rules - How to provide help or commentary on rules - General use of the proposed Rules Management System 		
RLE 080	<p>The Contractor shall provide selected Department staff with holistic education on the proposed Rules Management system that includes (but is not limited to):</p> <ul style="list-style-type: none"> - Knowledge about how the proposed Rules Management system works - Knowledge about how to structure the Rule Author(s) to meet the Agency goals - Knowledge about how to create, maintain and update rules in the proposed Rules Management system 		
RLE 081	The EES shall have the ability to test rules independently from the application with which they are being integrated.		
RLE 082	The EES shall have the ability to debug rules using an integrated tool.		
RLE 083	The EES shall have the ability to assign effective dates to rules to control when rules are applied and to allow the storage and application of rules in historical, current, and future contexts.		
RLE 084	The EES shall have the ability to invoke rules as a service from the service integration capability as well as directly from other system modules.		
RLE 085	The EES shall have the ability to record and output the exact reasons and/or basis for decisions determined by the Rules Engine.		
RLE 086	The EES business rules shall be expressed using a consistent, technology-neutral standard format that is human-readable.		
RLE 087	The EES shall provide a Business Rules Engine to generate transaction logs in accordance with the Harmonized Security and Privacy Framework and other federal requirements.		
RLE 088	The EES shall provide a Business Rules Engine, which generates transaction logs in accordance with the Health Insurance Portability and Accountability Act (HIPAA)		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
RLE 089	The EES should be able to recreate results on a unique set of data regardless of when the rules are executed; modeled and/or What-if situations are required.		
RLE 090	The EES should provide a Business Rules Engine which contains a process for built-in rule review and approval process that should identify any conflicts in business rules as they are being developed.		
RLE 091	The EES should include a Business Rules Engine which provides a debugging process that automatically analyzes and identifies logical errors (i.e. conflict, redundancy, and incompleteness) across business rules.		
RLE 092	The EES should provide a Business Rules Engine which allows for the tracking and reporting of rules usage.		
RLE 093	The EES should include a Business Rules Engine which provides the flexibility to define business rules by inclusion or exclusion.		
RLE 094	The EES should include a Business Rules Engine which provides the capability for the user to view and model rules for system exceptions online and to trace exception rule dependencies.		
RLE 095	The EES should provide a Business Rules Engine to manage the synchronization of business policies and rules across physical system environments. (e.g. development, test, training and production).		
RLE 096	The EES should have the ability to automatically promote rules from one environment to another (e.g. development to system test to user acceptance to production) as well as rollback changes to a previous version.		
RLE 097	The EES should have the ability to produce and consume rules in both machine and human readable formats (which may be the same format).		
RLE 098	The EES should have the ability to define rules via a customizable business vocabulary using rule metaphors, including decision tables, decision trees, and text-based rules.		

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18. Portal Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
PRT 001	The EES shall provide a portal UI framework that separates content from logic and is robust, scalable and interoperable with W3C Web-based standards.		
PRT 002	The EES shall provide session management capabilities to support user sessions and coordinated back-end application functionality.		
PRT 003	The EES shall provide support for multiple languages and character set encoding standards.		
PRT 004	The EES shall provide portal personalization and customization capabilities for the constituent user experience.		
PRT 005	The EES shall support access from multiple channels and devices.		
PRT 006	The EES shall provide support for Web content management EES that is robust and scalable.		
PRT 007	The EES shall provide time-based content expiration and version management capabilities.		
PRT 008	The EES shall provide Web content related workflow management capabilities.		
PRT 009	The EES shall provide syndicated content capabilities including creation and subscription to RSS feeds		
PRT 010	The EES shall provide content metadata attributes for portal extensibility.		
PRT 011	The EES shall provide multimedia Web content management capabilities.		
PRT 012	The EES shall provide wiki- and blog-based capabilities		
PRT 013	The EES shall provide XHTML e-form capabilities.		
PRT 014	The EES shall provide survey engine capabilities.		
PRT 015	The EES shall provide chat and instant messaging (IM) support.		
PRT 016	The EES shall provide the capability to consume externally available mapping Web services.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
PRT 017	The EES shall provide portlet capabilities.		
PRT 018	The EES shall provide inter-portlet communications that are robust, scalable and reliable using Shared Render Parameter and Events methods.		
PRT 019	The EES shall provide search engine capabilities.		
PRT 020	The EES shall provide taxonomy-based cataloging of portal resources.		
PRT 021	The EES shall provide index-based search capabilities.		
PRT 022	The EES must allow for user analytics to be captured and reported		
PRT 023	The EES shall support commonly used Internet browsers without any degradation in functionality, including the following:		
PRT 024	<ul style="list-style-type: none"> • Internet Explorer Version 8.0 or greater 		
PRT 025	<ul style="list-style-type: none"> • Mozilla Firefox Version 6 or greater 		
PRT 026	<ul style="list-style-type: none"> • Google Chrome Version 20 or greater 		
PRT 027	<ul style="list-style-type: none"> • Apple Safari version 5.1 or greater 		
PRT 028	<ul style="list-style-type: none"> • Opera Browsers 10 or greater 		
PRT 029	The EES shall meet all American with Disabilities Act (ADA) and Limited English (LEP) requirements as required by the ACA and Federal regulations.		
PRT 030	The EES shall allow consumers to submit applications with an electronic signature that complies with State, federal, and agency requirements and standards.		
PRT 031	The EES shall use cascading style sheets and other modern browser technologies to ensure that the look and feel of the site can be changed without requiring reprogramming the portal if using a browser based interface.		
PRT 032	The EES shall provide the ability to capture, display and maintain confidentiality statements and privacy protections as specified by the Department.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
PRT 033	The EES shall provide the ability to capture, display and maintain signature acknowledgement(s) of completed forms / case activity(s) as specified by the Department.		
PRT 034	The EES shall provide the ability for external users (e.g. Clients, Community Partners) to upload documents as specified by the Department.		
PRT 035	The EES should support small form-factor devices, including the following mobile phone and tablet platforms:		
PRT 036	<ul style="list-style-type: none"> • iOS phones and tablets 		
PRT 037	<ul style="list-style-type: none"> • Android phones and tablets 		
PRT 038	<ul style="list-style-type: none"> • Blackberry phones and tablets 		
PRT 039	<ul style="list-style-type: none"> • Windows mobile phones and tablets 		
PRT 040	The EES should 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.		
PRT 041	The EES should provide web analytics.		
PRT 042	The EES should provide citizen and business-centric portals.		
PRT 043	The EES should have a common look and feel across the portal, regardless of the source of information		

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19. Application Server Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
APP 001	The Application Server shall be a scalable, enterprise-ready application and shall support the deployment of many types of distributed applications and provides an ideal foundation for building applications based on SOA.		
APP 002	The Application Server shall enable deployment of mission-critical applications or components in a robust, secure, highly available, and scalable environment.		
APP 003	The Application Server clusters shall provide scalability and reliability for applications by distributing the work load among multiple instances of the server.		
APP 004	The Application Server clusters shall have overload protection to allow the server the ability to detect, avoid, and recover from overload conditions.		
APP 005	The Application Server clusters shall prioritize work based on pre-defined rules and by monitoring actual run time performance statistics.		
APP 006	The Application Server clusters shall store-and-forward services to enable the server to deliver messages reliably between applications that are distributed across many Server instances.		
APP 007	Allows for System Administration that include tasks such as creating Application Server domains; deploying applications or components; migrating domains from development environments to production environments; monitoring and configuring the performance of the application Server domain; and diagnosing and troubleshooting problems.		
APP 008	The Application Server security architecture shall provide a comprehensive, flexible security infrastructure designed to address the security challenges of making applications or components available on the Web.		
APP 009	Shall provide for a monitoring and diagnostic service that creates, collects, analyzes archives, and accesses diagnostic data generated by a running server and its deployed applications.		
APP 010	The EES must allow for user analytics to be captured and reported.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
APP 011	The EES shall support session replication to support transparent fail over.		
APP 012	The EES shall provide guidelines and tools (MVC frameworks, persistent frameworks) to create web applications (portal or stand-alone) with basic CRUD functionality.		

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20. Database Management System Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
DMS 001	The EES shall lock database records based on various parameters (e.g., at row level, field level, or at the application level).		
DMA 002	The EES shall accommodate separate instances of databases.		
DMS 003	The EES shall support online modifications to database structures with minimal user downtime.		
DMS 004	The EES shall allow for data and transaction replication including, but not limited to, copying an instance of any database to specified locations (e.g. SAN, Multi-site implementations)		
DMS 005	The EES shall provide standard data extraction APIs to allow import and export of data.		
DMS 006	The EES shall provide documented best practices including, but not limited to optimum database configuration, client maintenance and change control.		
DMS 007	The EES shall handle load balancing, failover and/or clustering ability for extended scalability and performance		
DMS 008	The System shall avail the capacity planning model for database configuration.		
DMS 009	The EES supports advanced configurations for data caching (e.g., support of client/application caching, support of server caching, etc.)		
DMS 010	The EES shall have the ability to optimize performance in transaction processing versus report processing		
DMS 011	The EES shall use history tracking within the database and logging options (e.g., transaction auditing)		
DMS 012	The EES shall be fully ACID (Atomicity, Consistency, Isolation, Durability)- compliant so as to ensure it handles transaction rollbacks, validity and referential integrity checks, etc.		
DMS 013	The EES shall handle record locking (e.g., row, field, other) and record updating/committing.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
DMS 014	The EES shall support indexing technology (multiple types of Indexing shall be available to tune performance of SQL statements).		
DMS 015	The EES must have the ability to support a variety of data model constructs including complex entity relationships and complex many-to-many relationships		
DMS 016	The EES shall provide the ability to optimize individual queries and support parallelizing a query to run on multiple CPUs at the same time to increase performance.		
DMS 017	The EES shall manage multiple query queue entries in parallel.		
DMS 018	The EES shall offer tools to manage and control disparate mixed workloads in a DBMS environment.		
DMS 019	The EES must have the ability to maintain security based upon defined roles.		
DMS 020	The EES must have data replication capabilities to external file formats or other RDBM Systems.		
DMS 021	The EES shall have full, incremental and transaction log backup and recovery capabilities on both a regular schedule and an ad hoc basis, including redundant off-site backups.		
DMS 022	The EES shall provide the capability to remain fully-functional during database backup windows.		
DMS 023	The EES must support geo-coded address data for the storage and retrieval of latitude and longitude coordinates.		
DMS 024	The EES shall assist the Department in developing procedures to ensure that specified data is archived and protected from loss, unauthorized access, or destruction.		
DMS 025	The EES shall have the ability to extend the data model in a manner that is compatible with framework upgrades.		
DMS 026	The EES shall have the ability within the base data model to store effective and expiration dates for items being tracked.		
DMS 027	The EES shall have the ability to prevent the alteration of information that has been deemed as historical.		
DMS 028	The EES shall have the ability to maintain the data model and associated dictionaries and generate appropriate DDL for local modifications and new releases of the product.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
DMS 029	The EES shall have the ability to gather and analyze database performance information and provide recommendations for improvement.		
DMS 030	The EES shall employ one defined set of data standards (e.g., consistent data schema, data element, data class, field lengths, data tables, view naming conventions).		
DMS 031	The EES shall provide consistency and validity checks on data elements at the database level.		
DMS 032	The EES shall provide a data history in accordance with state and federal law (7 years is the general requirement except where otherwise indicated).		
DMS 033	The EES shall provide the ability to archive records (i.e., remove from active system) based on administrator defined criteria.		
DMS 034	The EES shall properly normalize or de-normalize all tables for efficient operation.		
DMS 035	The EES shall store all data (data, configuration, user, etc.) in a central repository.		
DMS 036	The EES shall provide sharing of data among all parts of an integrated system.		
DMS 037	The EES shall store all data in industry-standard relational databases that use referential integrity rules.		
DMS 038	The EES shall have the capability and capacity to maintain data as required by Nebraska and federal requirements as well as the DHHS electronic retention policy		
DMS 039	The EES should have the ability to support conceptual, logical and physical modeling.		
DMS 040	The EES should have the ability to reverse engineer, document, and inventory existing databases.		
DMS 041	The EES should include metadata on all data fields stored in the database, web services, or indexed documents in the document library.		
DMS 042	The EES should provide the ability to return archived records to the active system based on user request and/or administrator defined criteria.		
DMS 043	The EES should provide the ability to configure a retention schedule for records and documents.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
DMS 044	The EES should provide automatic program checks for controlling data files, verifying correct processing, and ensuring data integrity.		
DMS 045	The EES should have the ability to retrieve data based on worker requests and retrieve the data and return it to the system within 24 hours.		

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21. SOA Governance Infrastructure Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
GOV 001	The Enterprise Metadata Repository shall provide design-time governance in support of the service life phase, delivering key capabilities for the storage and management of an extensible set of metadata for number of composites, services, business processes, and other IT-related assets.		
GOV 002	A Service Registry shall serve as an integration point for runtime tooling.		
GOV 003	The SOA governance infrastructure should support the Service Bus in subscribing to new or modified assets.		
GOV 004	The SOA governance infrastructure should facilitate composite applications in discovering updated endpoints and WSDL locations.		
GOV 005	As part of the SOA governance model, Runtime monitoring tooling should publish metrics to the Service Registry.		
GOV 006	The security policy manager for Web services shall allow for centrally defined security policies that govern Web services operations (such as access policy, logging policy, and load balancing).		
GOV 007	The ESB solution shall provide dynamic discovery and service level monitoring of all artifacts deployed in the Application Server.		
GOV 008	The Contractor shall define governance processes for the following domains:		
GOV 009	<ul style="list-style-type: none"> • Service Portfolio Management 		
GOV 010	<ul style="list-style-type: none"> • Services Technical Architecture 		
GOV 011	<ul style="list-style-type: none"> • Service Design & Development 		
GOV 012	<ul style="list-style-type: none"> • Configuration & Release Management 		
GOV 013	<ul style="list-style-type: none"> • Contract Management 		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
GOV 014	<ul style="list-style-type: none">• Service Monitoring & Control		
GOV 015	<ul style="list-style-type: none">• Incident Management		
GOV 016	<ul style="list-style-type: none">• Change Management		

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22. Business Process and Case Management Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
CSE 001	The EES shall include business process management capabilities (e.g., roles, responsibilities, policies, procedures, approvals, deadlines, integrations, etc.).		
CSE 002	The EES shall provide process execution and state management.		
CSE 003	The EES shall interact/integrate with the case management components with Enterprise Data Management and Content Management Systems.		
CSE 004	The EES shall enable collaboration.		
CSE 005	The EES shall enable BAM (Business Activity Monitoring) and event-based notifications.		
CSE 006	The EES shall provide simulation and optimization.		
CSE 007	The EES shall provide a registry for process components.		
CSE 008	The EES shall provide robust Administration functions.		
CSE 009	The EES shall provide and/or integrate with a robust and easily configurable workflow engine.		
CSE 010	The EES shall include the capability to assign tasks to staff based on defined business rules.		
CSE 011	The EES shall include the capability to route work to the next person in a workflow based on process outcomes.		
CSE 012	The EES shall provide an automated method to balance workload based on user and work unit queues or skills and availability.		
CSE 013	The EES will provide a method to manually reassign workload based on user input.		
CSE 014	The EES shall support e-mail (push) or on-line queries (pull) by a user for work that is in their queue.		
CSE 015	The EES shall provide data validation rules to ensure data validity		
CSE 016	The EES shall enforce workflow rules (with task checklists) to ensure that processes are completed correctly.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
CSE 017	The EES shall improve management and staff accountability through the production of reports and/or electronic notifications which will alert users of pending and overdue work.		
CSE 018	The EES shall provide for comprehensive case tracking as defined in requirements detailed during system configuration - minimally these requirements will include logging of task status, case and contact history, issues, etc.		
CSE 019	The EES shall track milestones and due dates and support notification of the appropriate parties about upcoming and overdue milestones.		
CSE 020	The EES shall support multiple forms of electronics notification channels for external users (e.g. text, page, etc.).		
CSE 021	The EES shall support a visual/modeling tool to define business process flows.		
CSE 022	The EES shall be integrated and exposed via portal for citizens (100%) and key functionality for other users, enabling high usage of system within portal.		
CSE 023	The EES shall support standard business process definition languages.		
CSE 024	The EES shall provide the capability to tie business rules to workflows.		
CSE 025	The EES shall provide the capability to link a workflow to one or more workflows.		
CSE 026	The EES shall provide the capability to suspend and resume a workflow that is incomplete.		
CSE 027	The EES shall provide production of reports and/or electronic notifications to identify suspended workflows.		

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23. Application/Transaction Monitoring and Logging Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
TNS 001	The EES shall log all system transactions and keep them easily retrievable and sortable.		
TNS 002	The EES shall detect major errors related to one or more components including loss of network connectivity, a database server going off line, or the application suffers an out-of-memory situation.		
TNS 003	The EES shall detect less than desirable application performance, such as degraded servlet, database or other back end resource response times.		
TNS 004	The EES shall have safeguards designed to ensure that configuration variables affecting the application and the back end resources remain at Department predetermined configuration settings.		
TNS 005	The EES shall detect intrusion attempts by unauthorized system users.		
TNS 006	The EES shall monitor critical performance parameters such as response time, resource availability, CPU Utilization, etc.		
TNS 007	The EES shall provide a holistic view of a wide range of application services and network services providing the ability to drill down to a level where the observations provide useful information and both real-time and snapshot views.		
TNS 008	The EES shall send alarms based on the monitored attributes; these can be escalated through E-Mail / SMS etc.		
TNS 009	The EES shall provide information on the bottleneck in the system.		
TNS 010	The EES shall allow Department staff to perform admin activities through an intuitive user interface.		
TNS 011	The EES shall have the ability to create custom dashboards to empower the users.		
TNS 012	The EES shall allow for different roles for Users including Operators, Administrators, Managers etc.		
TNS 013	The EES shall allow for report generation and analysis for application troubleshooting and capacity planning.		

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24. Enterprise Content Management Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
	Document Management		
DOC 001	The EES shall provide the ability to capture EES-generated documents and store them at appropriate level (e.g. individual, case, program, application, various workflow/process).		
DOC 002	The EES shall provide the ability to store electronic forms (EES generated or 3rd-party generated forms).		
DOC 003	The EES shall enable indexing and searching of documents by a variety of user-defined metadata attributes.		
DOC 004	The EES shall provide support for full text search.		
DOC 005	The EES shall provide built-in viewers/converters for a wide variety of file types.		
DOC 006	The EES shall provide digital rights management capabilities.		
DOC 007	The EES shall provide check-in/check-out functionality for electronic documents.		
DOC 008	The EES shall provide notification features for files that are checked out (overdue, availability, etc.).		
DOC 009	The EES shall ensure version control of documents as they are changed or modified.		
DOC 010	The EES shall allow rollback to a previous version of a document.		
DOC 011	The EES shall enable collaborative document creation and/or markup.		
DOC 012	The EES shall enable attachment of documents to e-mails and e-mail distribution lists.		
DOC 013	The EES shall utilize the EES' authorization and access control for file level security.		
DOC 014	The EES shall have the ability to, based on rules or context, automate the creation of indexing, meta data and overall taxonomy.		
DOC 015	The EES shall have robust bulk load and conversion features.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
DOC 016	The EES shall provide the capability to communicate natively with the document management API.		
DOC 017	The EES shall provide the capability to access the output of the document management system over the Internet and/or Intranet web sites.		
DOC 018	The EES shall develop a user guide that can be accessed online and printed on demand.		
DOC 019	The EES shall provide the capability for online access to policy and procedure and training materials.		
DOC 020	The EES shall be integrated with document processing center workflow.		
Imaging and Image Capture			
IMG 001	The EES shall accommodate multiple imaging locations.		
IMG 002	The EES shall integrate the Imaging and Document Management System with Nebraska's Hyland On-Base solution.		
IMG 003	The EES shall provide the capability to access Nebraska's Hyland On-Base solution to extract data to pre-populate index fields, and/or values on forms.		
IMG 004	The EES shall provide the capability to send and receive faxed and e-form documents, process the data and image directly into and out of the system including the ability to automatically send confirmation of transmission to the sender.		
IMG 005	The EES shall provide the capability for performing conditional routing that will send documents to a specific queue or inbox, either manually or electronically, based on preset conditions as defined by the User.		
IMG 006	The EES shall provide the capability to store and view a multiple page document as a single document.		
IMG 007	The EES shall provide the capability to attach notes, annotations, e-mails and other documents to an original scanned document at any time without rescanning.		
IMG 008	The EES shall provide the capability to notify the user when a duplicate document has been received so the user can decide whether to use the previously received document, replace the existing document or store the new document separately.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
IMG 009	The EES shall provide the capability to link imaged documentation together and link it to an individual and/or cases within Nebraska EES.		
IMG 010	The EES shall provide the capability to record user and workstation identification for each document processed, accessed or updated.		
IMG 011	The EES shall provide the capability for documents to be grouped together during scanning based on user defined criteria.		
IMG 012	The EES shall provide the capability to allow the User to manually remove, rescan and replace a previously scanned image or document(s).		
IMG 013	The EES shall provide the capability to employ user-defined form/template, indexes and/or field values for recognition and retrieval of documents.		
IMG 014	The EES shall provide the capability to validate data captured from specific fields on forms electronically read by OCR/OMR/ICR.		
IMG 015	The EES will provide the capability to archive documents manually and/or automatically by user-defined criteria.		
IMG 016	The EES shall provide the capability for archived documents to be retrieved and re-indexed.		
IMG 017	The EES shall provide the capability to permanently delete documents based on user defined criteria.		
IMG 018	The EES shall provide the capability to interface with other imaging systems using industry standard interfaces and file formats.		
IMG 019	The EES shall provide the capability to version multiple copies of scanned documents.		
IMG 020	Scanners provided as part of the EES shall have the capability to scan at least 80 pages per minute.		
IMG 021	The EES shall provide image retrieval response times within a maximum of two seconds for all documents stored in the system given a minimum level of bandwidth agreed during detailed requirements and EES configuration.		
IMG 022	Scanners provided as part of the EES shall provide the capability for simplex and duplex scanning.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
IMG 023	The EES shall provide audit trail functions with the ability to log every step in the process to a database for query and reporting purposes.		
	Records Management		
REC 001	The EES shall automatically calculate transfer and destruction dates (and assign records ready for deletion to the appropriate review process for approval of final deletion) for all records in the retention schedules.		
REC 002	The EES shall provide email notification of disposition results		
REC 003	The EES shall include a workflow tool to support the records management process.		
REC 004	The EES shall allow users to manually or automatically classify records or classified automatically based on a policy/rules engine.		
REC 005	The EES shall allow administrators and authorized users to create, apply, view or remove legal holds for individual or multiple records.		
REC 006	The EES shall have the capability to produce colored and bar-coded labels created for physical records.		
REC 007	The EES shall have the capability to check records in and out using barcodes, with adherence to security permissions and support the use of barcode scanners for the purpose.		
REC 008	The EES shall have the capability to track all types and sizes of storage containers within storage locations.		
REC 009	The EES shall have the ability for an administrator to create and maintain retention schedules.		
REC 010	The EES shall have the ability to create disposition, legal hold and audit reports for the records.		
	Web Content Management		
WEB 001	The EES shall provide content authoring capabilities including:		
WEB 002	<ul style="list-style-type: none"> • Provide a structured container for the content (e.g. document) 		
WEB 003	<ul style="list-style-type: none"> • Support reuse via Copy and Paste or "Save As" 		
WEB 004	<ul style="list-style-type: none"> • Tracking of changes to content within a container 		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
WEB 005	<ul style="list-style-type: none"> Drag-and-drop page layout 		
WEB 006	<ul style="list-style-type: none"> Ability for collaboration by allowing the “single control” to transfer between authors, reviewers and authorizers 		
WEB 007	<ul style="list-style-type: none"> Real-time active collaboration allowing multiple authors to review and update the content in a container during the course of a shared session 		
WEB 008	<ul style="list-style-type: none"> Standard templates to make authoring documents within certain parameters 		
WEB 009	<ul style="list-style-type: none"> Facilitate the use of Microsoft Office creation tools to submit content directly into the WCM repository 		
WEB 010	<ul style="list-style-type: none"> The bulk import and export of XML content for integration and migration 		
WEB 011	<ul style="list-style-type: none"> Reuse of content and templates to enforce a common “look and feel” and brand identity 		
WEB 012	<ul style="list-style-type: none"> A flexible and extensible workflow to manage authoring review and approval of content across its life cycle 		
WEB 013	<ul style="list-style-type: none"> The ability to expire and retire content. 		
WEB 014	The EES shall support the combination of text and other page elements, such as graphics, logos and buttons and multimedia, such as audio/video and Flash.		
WEB 015	The EES shall include the ability to support content in multiple languages.		
WEB 016	The EES shall support multiple versions of the same site using the same WCM instance and repository.		
WEB 017	The EES shall display content targeted toward specific user profiles.		
WEB 018	The EES shall target content based on visitor-supplied preferences		
WEB 019	The EES shall personalize a site based on customer transaction data, apply personalization rules to elements smaller than pages and use perceived behavior employing mechanisms to assess the behavior of an individual user (known or unknown) in real time and enable choice of delivered content based on that analysis).		
WEB 020	The EES shall provide reporting of:•		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
WEB 021	<ul style="list-style-type: none"> The status and history of a piece of content 		
WEB 022	<ul style="list-style-type: none"> Content source and descriptive information 		
WEB 023	<ul style="list-style-type: none"> Timetable of release dates or content submission dates 		
WEB 024	<ul style="list-style-type: none"> User-definable audit reporting on an ad hoc basis for content 		
WEB 025	<ul style="list-style-type: none"> Active content page inventory 		
WEB 026	The EES shall provide out-of-the-box log file analysis.		
WEB 027	The EES shall have the ability to find broken links and repair them.		
WEB 028	The EES shall have the capability to track and report on-site use and demographics.		
WEB 029	The EES shall provide content publication capabilities including:		
WEB 030	<ul style="list-style-type: none"> Support in-context (what you see is what you get [WYSIWYG]) 		
WEB 031	<ul style="list-style-type: none"> editing and the ability to preview rendered content in a staging area. 		
WEB 032	<ul style="list-style-type: none"> verify content for hygiene (for example, accessibility, spelling, format validation, privacy, security, speed of deployment) 		
WEB 033	<ul style="list-style-type: none"> Publish to multiple locations and channels based on predefined attributes 		
WEB 034	<ul style="list-style-type: none"> Roll back content publication if unsuccessful 		
WEB 035	<ul style="list-style-type: none"> Automatically publishing on a scheduled date 		
WEB 036	<ul style="list-style-type: none"> Support dynamic and event-driven presentation of content 		

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25. Identity Management Requirements

Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
IDT 001	The EES shall provide APIs/Connectors to integrate with a variety of 3rd party/custom applications to provide single sign-on.		
IDT 002	The EES shall enforce a limit of (configurable) consecutive invalid access attempts by a user.		
IDT 003	The EES shall protect against further, possibly malicious, user authentication attempts using an appropriate mechanism (e.g. locks the account/node until released by an administrator, locks the account/node for a configurable time period, or delays the next login prompt according to a configurable delay algorithm).		
IDT 004	The EES shall provide an administrative function to reset passwords.		
IDT 005	The EES shall not display passwords while being entered.		
IDT 006	The EES shall provide only limited feedback information to the user during the authentication.		
IDT 007	The EES shall support case-sensitive usernames that contain typeable alpha-numeric characters in support of ISO-646/ECMA-6 (aka US ASCII).		
IDT 008	The EES shall allow an authenticated user to change their password, automatically when possible, consistent with password strength rules.		
IDT 009	The EES shall support password strength rules that allow for minimum number of characters, and inclusion of alpha-numeric complexity.		
IDT 010	The EES shall support case-sensitive passwords that contain typeable alpha-numeric characters in support of ISO-646/ECMA-6 (aka US ASCII).		
IDT 011	The EES shall use either standards-based encryption, e.g., 3DES, AES, or standards-based hashing, e.g., SHA1 to store or transport passwords.		
IDT 012	The EES shall prevent the reuse of passwords previously used within a specific (configurable) timeframe, or shall prevent the reuse of a specific (configurable) number of the most recently used passwords.		

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Req #	Requirement Description	Bidder Ability Code	Proposed EES/Comments
IDT 013	The EES shall meet:		
IDT 014	<ul style="list-style-type: none"> CMS E-Authentication Assurance Levels 		
IDT 015	<ul style="list-style-type: none"> NIST 800-63 guidance Level 1: Single factor authentication, Identity proofing relies on subscriber's own assertions Level 2: Single factor authentication, requires verifying the individual's financial account information, and other information Level 3: Multifactor authentication, requires verifying the individual's financial account information, and other information Level 4: Multifactor authentication, In-person proofing is required Tokens (typically a cryptographic key or password) for proving identity, 		
IDT 016	<ul style="list-style-type: none"> Identity proofing, registration and the delivery of credentials which bind an identity to a token, 		
IDT 017	<ul style="list-style-type: none"> Remote authentication mechanisms, that is the combination of credentials, tokens and authentication protocols used to establish that a claimant is in fact the subscriber he or she claims to be 		
IDT 018	<ul style="list-style-type: none"> Assertion mechanisms used to communicate the results of a remote authentication to other parties. 		
IDT 019	The EES should re-authenticate the user before any access to Protected Health Information (PHI) or other sensitive or confidential information is allowed, including when not connected to a network (e.g. on unconnected mobile devices).		
IDT 020	The EES shall encrypt storage of all passwords using a one-way hash or other equivalent functionality to minimize damage from a security breach.		