

Requirements Summary :	Meeting Requirements				
	Total Original	Out of the Box	Configuration	Custom Design and Development	Does not meet
Application Architecture	111	0	0	0	0
Integration Architecture	41	0	0	0	0
Data Architecture	70	0	0	0	0
Infrastructure Architecture	22	0	0	0	0
Data Conversion	22	0	0	0	0
Accessibility	4	0	0	0	0
Manageability	17	0	0	0	0
Reliability	12	0	0	0	0
Scalability	9	0	0	0	0
Sustainability	6	0	0	0	0
Usability	40	0	0	0	0
Security and Privacy	24	0	0	0	0
Organizational Change Management	20	0	0	0	0
Operations and Maintenance	217	0	0	0	0
Total Requirements	615	0	0	0	0

Column Description :	
REQ ID	Requirement ID. Formatted as follows. "Requirement Type-Category Name-Requirement Number" (NFR-DA-012)
Level 1	Category Name
Level 2	Subcategory Name
Level 3	Subcategory Name, as necessary
Requirement	Descriptive narrative of the requirement
Out of the Box	Fill in with an "X" if the requirement is met with the SI's Off the Shelf (COTS) Software
Configuration	Fill in with an "X" if the requirement is met with the SI's Off the Shelf (COTS) Software and will need to be configured
Custom Design and Development	Fill in with an "X" if the requirement must be fulfilled by customizing the SI's software offering
Does not meet	Fill in with an "X" if the requirements can not be met by SI's software offering
Phase	Fill in with "Project Startup" or "Release #" Be sure discern what release number
Bidder Response Narrative Section Reference	Section within the bidder's response
Notes	Any contractor comments or notes
REQ Met?	FOR STATE USE ONLY: Fill in with "Yes" "No"
Reviewer Comment	FOR STATE USE ONLY: Any State comments or notes

REQ ID	Level 1	Level 2	Level 3	Requirement	Mark on 1 column with "X" per Requirement				Phase (Project Startup, Release #)	Bidder Response Narrative Section Reference	Notes	State Use	
					Out of the Box	Configuration	Custom Design and Development	Does not meet				REQ Met? (Y / N / P)	Reviewer Comment
NFR-AA-001	Application Architecture	User Channels	Web Portal	The term "portals" refers to the different user interfaces needed by the Eligibility System. We specifically recognize the Member Portal, the Worker Portal and Partner Portals as being the major user interfaces for the Solution.									
NFR-AA-002	Application Architecture	User Channels	Web Portal	The Solution shall allow the user interface to be optimized for 1024 pixel wide screens but shall still work with lower or higher resolutions. The browser shall not display a horizontal scroll bar when viewed with a screen resolution of 1024x768 - even when there is a vertical scrollbar displayed. This screen width is a common minimum specification and is also the common configuration for tablet interfaces.									
NFR-AA-003	Application Architecture	User Channels	Web Portal	The Solution shall provide the capability for remote access of the Worker Portal in compliance with HCFA policy and practice.									
NFR-AA-004	Application Architecture	User Channels	Web Portal	The Solution shall provide session management capabilities to support user sessions and coordinated back-end application functionality.									
NFR-AA-005	Application Architecture	User Channels	Web Portal	The Solution shall provide portal personalization and customization capabilities for user experience.									
NFR-AA-006	Application Architecture	User Channels	Web Portal	The Solution should provide support for web content management solution.									
NFR-AA-007	Application Architecture	User Channels	Web Portal	The Solution shall provide time-based content expiration and version management capabilities.									
NFR-AA-008	Application Architecture	User Channels	Web Portal	The Solution shall provide web content related workflow management capabilities.									
NFR-AA-009	Application Architecture	User Channels	Web Portal	The Solution shall provide syndicated content capabilities including creation and subscription to RSS feeds.									
NFR-AA-010	Application Architecture	User Channels	Web Portal	The Solution shall provide multimedia web content management capabilities.									
NFR-AA-011	Application Architecture	User Channels	Web Portal	The Solution shall provide taxonomy-based cataloging of portal resources.									
NFR-AA-012	Application Architecture	User Channels	Web Portal	The Solution shall provide a portal UI framework that separates content from logic and is robust, scalable and interoperable with W3C web-based standards and recommendations.									
NFR-AA-013	Application Architecture	User Channels	Web Portal	The Solution shall allow the user interface to work on a touch-screen tablet interface although it is not necessary to specifically create a custom mobile user interface for tablet computing.									
NFR-AA-014	Application Architecture	User Channels	Web Portal	The Solution shall make it possible such that when a person uses the browser to resize (zoom) a page the page shall behave functionally.									
NFR-AA-015	Application Architecture	User Channels	Web Portal	The Solution shall allow a user session to timeout after a specified period. The timeout period shall be configurable for different classes of users and minimally allow different values for the public web site and the internal web site.									
NFR-AA-016	Application Architecture	User Channels	Web Portal	The Solution shall allow a user to see, prior to session timeout, a message that warns them of the imminent timeout (e.g., a 1 minute notice) and they shall be able to click this message and keep their server session alive.									
NFR-AA-017	Application Architecture	User Channels	Web Portal	The Solution shall collect and collate statistics on web portal usage to support reporting requirements and continuous improvements in design.									
NFR-AA-018	Application Architecture	User Channels	Web Portal	The Solution shall have web statistics that capture the entry screens, exit screens, application abandonment frequency/location, % of anonymous users who create accounts, logon duration, session timeouts, time on each page, keyword searches, etc.									
NFR-AA-019	Application Architecture	User Channels	Web Portal	The Solution shall ensure that each web page contains a HCFA copyright statement in the copyright meta tag.									
NFR-AA-020	Application Architecture	User Channels	Web Portal	The Solution shall ensure that JavaScript, CSS and other text files contain a HCFA copyright statement as a comment.									
NFR-AA-021	Application Architecture	User Channels	Web Portal	The Solution shall be able to post announcements/messages that are displayed on a user's home page. Different messages shall be targeted for different user groups; minimally internal (professional) users and external (member/citizen) users.									
NFR-AA-022	Application Architecture	User Channels	Web Portal	The Solution shall allow the user interface for public access ("Member Portal") to operate across all mainstream browsers. Mainstream browsers are defined as any browser that has greater than 3% of the US browser market or greater than 3% of the US mobile-browser market and all versions of that browser within the last 2 years and across all supported operating systems. Refer to the State's "Enterprise Technology Architecture" for web browser standard for internal web portals.									
NFR-AA-023	Application Architecture	User Channels	Web Portal	The Solution shall, if the a browser is known to not to be supported, allow the portal to present an information page to the user, i.e., fail gracefully. Specifically if IE6 is known not to function properly the system shall inform the user accordingly.									

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NFR-AA-024	Application Architecture	User Channels	Web Portal	The Solution shall create a plan, and then execute the plan, for "white hat" Search Engine Optimization (SEO) in order to encourage the indexing and discovery of the Member Portal.									
NFR-AA-025	Application Architecture	User Channels	Web Portal	The Solution shall install sitemap files to encourage the correct search engine indexing of important web pages for the Member Portal.									
NFR-AA-026	Application Architecture	User Channels	Web Portal	The contractor shall document a strategy to ensure that Google, and Bing present the Member Portal as "site links" in their search results.									
NFR-AA-027	Application Architecture	User Channels	Web Portal	The Solution shall allow the display text to be written in plain English and Spanish as otherwise dictated by the State and Federal regulations. The Solution shall allow the user interface to be multi-lingual and support both single and double byte languages if the State expands the languages supported.									
NFR-AA-028	Application Architecture	User Channels	Web Portal	The Solution shall utilize the concepts and design demonstrated in the UX 2014 prototype to be leveraged wherever applicable.									
NFR-AA-029	Application Architecture	User Channels	Web Portal	The Solution shall allow a user to create a web profile and account at the time they first fill out an eligibility application.									
NFR-AA-030	Application Architecture	User Channels	Web Portal	The Solution shall allow the account setup to use the user's email address based on a system policy configuration parameter.									
NFR-AA-031	Application Architecture	User Channels	Web Portal	The Solution shall provide links to the Healthcare.gov or other sites when specified by HCFA.									
NFR-AA-032	Application Architecture	User Channels	Web Portal	The Solution shall allow the branding across the Member and Professional User Portals to be unified and also complementary to existing State Web sites.									
NFR-AA-033	Application Architecture	User Channels	Web Portal	The Solution shall experience no loss in functionality due to pop-up blockers and other toolbars designed to block advertisements.									
NFR-AA-034	Application Architecture	User Channels	Web Portal	The Solution shall allow video tutorials to be displayed in any mainstream format(s) but shall be available across all supported platforms.									
NFR-AA-035	Application Architecture	User Channels	Web Portal	The Solution shall allow instructional help support to generally be available for each page and for the site as a whole. The design shall consider the best way of embedding help support. This may mean including inline text on some pages, embedding links to supporting pages, embedding videos in a page, providing context specific FAQs, providing hover option over fields to generate a description of the data element, etc.									
NFR-AA-036	Application Architecture	User Channels	Web Portal	The Solution shall allow online help support for the Worker Portal to be at a page level and for the site as a whole. Training manuals, procedure manuals, policy manuals, overview presentations etc., shall be available online and accessible from the banner menu or home page. The online help text shall include instructions on how to perform certain tasks (e.g., "How do I forward an inbox alert to my supervisor", "How do we handle the recent incarceration of a household member?"). The Solution shall provide hover option over HCFA defined fields to generate a tool tip of the data element.									
NFR-AA-037	Application Architecture	User Channels	Mobile	The Solution shall directly support mobile platforms. This support shall include a native application that is optimized for a smartphone.									
NFR-AA-038	Application Architecture	User Channels	IVR	The Solution shall interface with the TNHC's solutions to provide function proscribed by HCFA.									
NFR-AA-039	Application Architecture	Rules Engine	-	The Solution shall comply with the recommendations issued pursuant to section 1561 of the Affordable Care Act and shall externalize all the business rules from the application.									
NFR-AA-040	Application Architecture	Rules Engine	-	The Solution shall support cataloguing, design and execution of eligibility rules and business rules.									
NFR-AA-041	Application Architecture	Rules Engine	-	The Solution shall allow production rules to be effective dated and so make it possible to run eligibility on historical data using different historical rules.									
NFR-AA-042	Application Architecture	Rules Engine	-	The Solution shall provide a rules search capability by keyword, data element or other criteria.									
NFR-AA-043	Application Architecture	Rules Engine	-	The Solution shall provide a rules engine to offer a modular, flexible approach to systems development that meets CMS seven Conditions and Standards for enhanced funding. The proposed rules engine shall have at least two successful implementations in Medicaid Eligibility, HIX or IES systems.									
NFR-AA-044	Application Architecture	Rules Engine	-	The Solution shall provide a business rule vocabulary for the proposed rules engine.									
NFR-AA-045	Application Architecture	Rules Engine	-	The Solution shall define definitions of vocabulary items used by the proposed rules engine.									
NFR-AA-046	Application Architecture	Rules Engine	-	The Solution shall provide a rules engine which offers a report that identifies all the business policies in which an individual business rule trace back to.									

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NFR-AA-047	Application Architecture	Rules Engine	-	The Solution shall provide a decision report for each of the determinations, the Decision Report should provide at least the following information: i. Eligibility decision for each of individuals in a household ii. Programs the individual eligible for iii. Interim decisions e.g. monthly income, residency status, household size, immigration status which support the final decision iv. Denial reasons									
NFR-AA-048	Application Architecture	Rules Engine	-	The Solution shall provide a rules engine which contains a process for built-in rule review and approval process that shall identify any conflicts in business rules as they are being developed.									
NFR-AA-049	Application Architecture	Rules Engine	-	The Solution shall include a rules engine which provides a debugging process that automatically analyzes and identifies logical errors (i.e. conflict, redundancy, and incompleteness) across business rules.									
NFR-AA-050	Application Architecture	Rules Engine	-	The Solution shall include a rules engine which provides the flexibility to define business rules by inclusion or exclusion.									
NFR-AA-051	Application Architecture	Rules Engine	-	The Solution shall provide license free access to uncompiled rule set files.									
NFR-AA-052	Application Architecture	Rules Engine	-	The Solution shall have the ability to deliver eligibility determination results at real time.									
NFR-AA-053	Application Architecture	Rules Engine	-	The Solution shall have the ability to provide denial reason codes in case of denials.									
NFR-AA-054	Application Architecture	Rules Engine	-	The Solution shall express business rules in natural language corresponding with the core data elements identified through the National Information Exchange Model (NIEM) as required for integration with external systems.									
NFR-AA-055	Application Architecture	Rules Engine	-	The Solution shall support data verification and consistency checks.									
NFR-AA-056	Application Architecture	Rules Engine	-	The Solution shall support computed values e.g. monthly income based on input data.									
NFR-AA-057	Application Architecture	Rules Engine	-	The Solution shall be interoperable with the rest of proposed solution via technology neutral interfaces.									
NFR-AA-058	Application Architecture	Rules Engine	-	The Solution shall provide the ability to maintain and display the history of each rule change in the rules engine. This history will show previous versions of the rule, a timestamp of when the change was made and the ID of the user making the change.									
NFR-AA-059	Application Architecture	Rules Engine	-	The Solution shall provide the capability to add additional table-driven variables to support new regulations using a rules engine.									
NFR-AA-060	Application Architecture	Change	-	The Solution shall have the ability to create customizable web-based, interview sessions based on defined rule sets.									
NFR-AA-061	Application Architecture	Rules Engine	-	The Solution shall 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.									
NFR-AA-062	Application Architecture	Rules Engine	-	The contractor shall provide documentation for assisting rule authors and administrators with best practices for rule repository creation and maintenance, repository check-in/checkout, repository promotion across environments.									
NFR-AA-063	Application Architecture	Rules Engine	-	The contractor shall partner with the HCFA management and business analysts to build, implement, and maintain suitable policy models for eligibility determination and other rules to be automated using the proposed Rules Management System.									
NFR-AA-064	Application Architecture	Rules Engine	-	The contractor shall create the program rules in the proposed rules management system and test them in a test environment.									
NFR-AA-065	Application Architecture	Rules Engine	-	The contractor rules management team will work with and advise HCFA staff Rule Author(s) in the best practices of: i. 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 ii. Capturing meta-data about each of the rules sets and how they function									
NFR-AA-066	Application Architecture	Rules Engine	-	The contractor shall provide knowledge HCFA staff on but not limited to: i. How best to store and look up the meta-data ii. Defining the lifecycle of rule sets iii. How to integrate rules iv. How to provide help or commentary on rules v. General use of the proposed rules management system									

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NFR-AA-067	Application Architecture	Rules Engine	-	The contractor shall provide selected HCFA staff with holistic knowledge transfer on the proposed rules management system that includes but is not limited to: i. Knowledge about how the proposed rules management system works ii. Knowledge about how to structure the rule sets to meet the agency goals iii. Knowledge about how to create, maintain and update rules in the proposed rules management system									
NFR-AA-068	Application Architecture	Business Intelligence	-	The Business Intelligence Solution shall provide the ability to: i. Prioritize workload executions and ensure quality-of-service; ii. Partition indexing and aggregate management via parameters and tools; iii. Simulate the various workloads and mixes									
NFR-AA-069	Application Architecture	Business Intelligence	-	The Business Intelligence Solution shall provide workflow and collaboration support for administrator tasks.									
NFR-AA-070	Application Architecture	Business Intelligence	-	The Business Intelligence Solution shall be highly available via various mechanisms, e.g. data marts, data replication, clustering and backup configuration.									
NFR-AA-071	Application Architecture	Business Intelligence	-	The Business Intelligence Solution shall provide flexibility in using public/private cloud versions of the DBMS as an option to provide cost-effective scalability as needed.									
NFR-AA-072	Application Architecture	Business Intelligence	-	The Business Intelligence Solution shall provide for expansion of data storage as needed to accommodate increased volume of data based on approved capacity plans by HCFA.									
NFR-AA-073	Application Architecture	Business Intelligence	-	The Business Intelligence Solution 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).									
NFR-AA-074	Application Architecture	Business Intelligence	-	The Business Intelligence Solution shall support native geo-spatial data types.									
NFR-AA-075	Application Architecture	Business Intelligence	-	The Business Intelligence Solution shall support various database connectivity protocols (e.g. ODBC, JDBC, etc.)									
NFR-AA-076	Application Architecture	Business Intelligence	-	The Business Intelligence Solution shall make an underlying DBMS available as a data warehouse appliance so it is also available as a standalone query-able DBMS.									
NFR-AA-077	Application Architecture	Business Intelligence	-	The Solution shall be extensible and have a extensible data architecture incorporating state and external data.									
NFR-AA-078	Application Architecture	Business Intelligence	-	The Solution shall provide the ability for authorized users to create and customize reports, queries, and dashboards.									
NFR-AA-079	Application Architecture	Business Intelligence	-	The Solution 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.									
NFR-AA-080	Application Architecture	Business Intelligence	-	The Solution's business intelligence capabilities must be scalable to accommodate changes in solution scale including changes in user population, transaction volume, throughput and geographical distribution while maintaining the agreed service levels.									
NFR-AA-081	Application Architecture	Business Intelligence	-	The Solution shall provide the ability to impose graduated access to reports based on user role and agency requirements/permissions to better analyze program data.									
NFR-AA-082	Application Architecture	Business Intelligence	-	The Solution shall provide a reporting database or data warehouse separated from OLTP database.									
NFR-AA-083	Application Architecture	Enterprise Content Management	-	The Solution shall support the upload of supporting documents in a variety of mainstream formats include but not limited to:, e.g., JPG, PDF, TIFF, TXT, DOC, DOCX, XLS, XLSX. Store documents in a repository and link the workflow step to the documents. Initiate alerts and workflow as necessary.									
NFR-AA-084	Application Architecture	Enterprise Content Management	-	The Solution shall integrate with the TNHC's document imaging solution to associate documents submitted by member/application with an application, case or a contact in the eligibility system.									
NFR-AA-085	Application Architecture	Enterprise Content Management	-	The Solution shall provide technology neutral interfaces for document management e.g. search, upload, and retrieval to ensure interoperability between multiple system components e.g. web portal, mobile etc.									
NFR-AA-086	Application Architecture	Enterprise Content Management	-	The Solution shall be able to display and print content that was captured or uploaded in native format.									
NFR-AA-087	Application Architecture	Enterprise Content Management	-	The Solution shall have the functionality to print barcodes, as required, on system-generated documents.									
NFR-AA-088	Application Architecture	Enterprise Content Management	-	The Solution shall have the ability to scan this barcode and associate the document to the appropriate case and/or contact.									
NFR-AA-089	Application Architecture	Enterprise Content Management	-	The solution shall support an enterprise content management system that has the capability to capture, store, search, retrieve, annotate, and provide version control for documents.									

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NFR-AA-090	Application Architecture	Enterprise Content Management	-	The solution shall provide the ability to configure the document retention and purging processes as per state and federal policies.									
NFR-AA-091	Application Architecture	Customer Communication	-	The Solution shall allow correspondence (letters, forms, notices, etc.) that are generated by programs to be held in queues that can be reviewed by case workers before sending for printing. The Solution shall allow the notices to be grouped by notice type and support workflows to review, prioritize and release to printing.									
NFR-AA-092	Application Architecture	Customer Communication	-	The Solution shall add a unique number to each page of the notice along with the equivalent barcode. It shall be possible to use this number / barcode to determine the client and the document type.									
NFR-AA-093	Application Architecture	Customer Communication	-	The Solution shall allow for a notice to be printed locally with the sensitive PII and health data redacted, e.g., redact all but the last 4 digits of the SSN.									
NFR-AA-094	Application Architecture	Customer Communication	-	The Solution shall utilize an enterprise notice application for creating, modifying, directing, and archiving all correspondence.									
NFR-AA-095	Application Architecture	Customer Communication	-	The Solution shall present output in a manner that is consistent with large volume bulk print processes. The contractor shall employ technology that is widely adopted, commercially availability, and considered best of breed.									
NFR-AA-096	Application Architecture	Batch Framework	-	The Solution shall provide an enterprise scheduling product. The enterprise scheduling product provided should be an industry standard product that is widely adopted, commercially availability, and considered best of breed. The scheduler shall provide support for the ability to setup batch job execution based on: i. Time of day ii. Date iii. Processing cycle (daily, weekly, Monthly, Yearly, Quarterly.) iv. Upon request v. Arriving of a file									
NFR-AA-097	Application Architecture	Batch Framework	-	The job scheduler shall provide support for the ability to setup batch job execution based on: i. Time of day ii. Date iii. Processing cycle (daily, weekly, Monthly, Yearly, Quarterly.) iv. Upon request v. Arriving of a file									
NFR-AA-098	Application Architecture	Batch Framework	-	The Solution shall allow the individual batch jobs to produce an output log that records HCFA specified critical processing statistics such as records read, records written, records failed, etc.									
NFR-AA-099	Application Architecture	Batch Framework	-	The Solution shall allow output and error logs to be viewable online for designated users.									
NFR-AA-100	Application Architecture	Batch Framework	-	The Solution shall allow online and batch functions to be able to run concurrently.									
NFR-AA-101	Application Architecture	Batch Framework	-	The contractor will provide an enterprise scheduling product capable of automating and managing batch processes with prerequisites and dependencies from several disparate systems and schedulers.									
NFR-AA-102	Application Architecture	Batch Framework	-	The scheduler shall be capable of recognizing and managing dependencies of batch processes (e.g. sequencing multiple jobs) based on outcome of each successive job.									
NFR-AA-103	Application Architecture	Customer Communication	-	The Solution shall produce output in standard file formats that are supported by multiple contractor solutions.									
NFR-AA-104	Application Architecture	Batch Framework	-	The contractor will operate, maintain, and manage the enterprise scheduling software and hardware until the termination of the contract.									
NFR-AA-105	Application Architecture	Customer Communication	-	The contractor shall be responsible for managing quality, tracking, reconciliation all print output delivery and processes regardless of any / all 3rd party HCFA partners involved in producing print into the mail-stream. Any 3rd party printing an mailing vendor employed by the contractor must be approved by HCFA.									
NFR-AA-106	Application Architecture	Customer Communication	-	The Solution shall not restrict the design of templates of correspondences. The printing and mailing solution shall not restrict HCFA's ability to design correspondences including: i. Size of files transmitted ii. Pages in a correspondence iii. Types of correspondence iv. Graphics in correspondence									
NFR-AA-107	Application Architecture	Batch Framework	-	The scheduler should alert late, missing, and allow for automatic restart of abnormal conditions that may occur in the batch process.									
NFR-AA-108	Application Architecture	Customer Communication	-	The contractor Vendor shall provide on-going support, testing, and maintenance of the Output Management Solution for print, notices, letters, and templates.									
NFR-AA-109	Application Architecture	Customer Communication	-	The contractor Vendor shall regenerated of print output as requested.									

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NFR-AA-110	Application Architecture	Customer Communication		The contractor Vendor shall produce and reconcile final counts of each print, notice and letter type to validate postage charges and send final report to HCFA IS daily.									
NFR-AA-111	Application Architecture	Customer Communication		The contractor vendor shall design, develop, and implement a business continuity / disaster recovery plan for letter and notice processing.									

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NFR-INTA-001	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall include an Enterprise Service Bus (ESB) that has a solid reputation and a viable market share as recognized by the State.									
NFR-INTA-002	Integration Architecture	Enterprise Service Bus (ESB)	-	The contractor proposed ESB, at a minimum, must have been implemented and used in two successful Health Insurance Exchange or Medicaid Eligibility System implementations.									
NFR-INTA-003	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall use the ESB for all real-time interactions with systems/servers hosted on the State network and/or used in the State infrastructure.									
NFR-INTA-004	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall use the ESB in conjunction with the State designated secure XML gateway for all real-time interactions with systems external to the State network.									
NFR-INTA-005	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall provide functionality that provides reliability for applications, services or message flows including but is not limited to: i. Synchronous and asynchronous messaging ii. High availability iii. Fault tolerance iv. Failover v. In-order delivery vi. Transaction support vii. Execution prioritization viii. Message prioritization ix. Downstream throttling x. Guaranteed message delivery xi. Once only message delivery xii. Externalized control of message delivery retry frequency and attempt limit xiii. Failed message / dead letter capability xiv. Load balancing xv. Scalable									
NFR-INTA-006	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall have the ability to apply logic to the routing of messages, including but not limited to support for the following file interaction styles: i. Store and forward: Ability to persist a message and then send it to destinations. ii. Publish/subscribe: Ability to distribute a message to multiple destinations based on a message attribute usually described as the subject area of the message. iii. Request/reply: Ability to correlate asynchronous messages so that the target's response is associated with the appropriate request made by the source. iv. Content-based: The ability to route a message based on a value or values within a message.									
NFR-INTA-007	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall have the ability to track a message from its origin to its destination (inside a firewall), log on the status of that message and alert for attention to address exceptions.									
NFR-INTA-008	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall record traceable, auditable events as defined by the State security office.									
NFR-INTA-009	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall include but not limited to: i. Protocols: The ability to use standards-based communication protocols, such as TCP/IP, HTTP, HTTP/S, MQ and SMTP. ii. Protocol bridging: The ability to convert between the protocol native to the messaging platform and other protocols, such as Remote Method Invocation (RMI), SOAP over MQ and .NET remoting. iii - The ESB should be extensible using standard adapters that may be custom developed or purchased on the open market.									
NFR-INTA-010	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall have features that enable in-flight message manipulation, such as transformation (typically XML-based), intelligent routing, naming and addressing.									
NFR-INTA-011	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall implement synchronous and asynchronous system-to-system communication, moving messages between service consumer modules and service provider modules at runtime. The ESB component may also monitor for file creations that trigger processing, manipulate files in response to trigger or time based schedule events, and access / update database rows.									

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NFR-INTA-012	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall have the capability to bind services and other environment components through standard external environment controls such as UDDI or other URL resolution services.									
NFR-INTA-013	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall support industry-standards Health and Human Services domain exchange messaging standards including, but not limited to: i. National Information Exchange Model (NIEM) ii. ANSI X12 EDI (270, 271, 834, ...) iii. Health Level Seven (HL7)									
NFR-INTA-014	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall have the ability to support varying message payloads, ranging from individual transactions to large files (more than 1GB) containing multiple transactions. Where multiple transactions are embedded in file, the system should have the capability to manage the individual transactions in such a way that if the process is interrupted, it can be restarted without processing a record a second time or skipping records. This capability is commonly known as a checkpoint restart.									
NFR-INTA-015	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall provide the functionality used to monitor the operation of the overall system (services, applications, processes and application infrastructure), and to collect event logs 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 including but not limited to: i. Messaging traffic ii. Process state and behavior iii. Application and service parameters and behavior for all nodes									
NFR-INTA-016	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall provide for any combination of alert destinations such as Email, JMS, SNMP, reporting services, and server logs. The alerts shall be configurable 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.									
NFR-INTA-017	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution 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 including but not limited to: i. Authentication ii. Authorization iii. Encryption/decryption iv. Digital signatures v. Credential mapping									
NFR-INTA-018	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall provide the service lifecycle management capability such as the following: Examples include: i. Online catalog of services and associated artifacts such as WSDL files, XSDs, BPEL files ii. A single point of controlled access for cataloging, promoting, publishing and searching for information about managed assets iii. Metadata that enables an Enterprise Service Bus (ESB) to find, bind to and invoke the execution of a service implementation iv. Support for extending existing asset types and defining and populating custom asset types									
NFR-INTA-019	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution shall support Transport Security, Message Security, WS-Security, SAML architecture, and WS Policy. In addition, the Solution shall also 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.									
NFR-INTA-020	Integration Architecture	Enterprise Service Bus (ESB)	-	The Solution must incorporate role/group-based rights for the management of the Service Bus across the environments.									
NFR-INTA-021	Integration Architecture	Service Oriented Architecture (SOA)	-	The Solution shall provide the ability to publish services and related data elements to be used by different types and classes of service consumers.									
NFR-INTA-022	Integration Architecture	Service Oriented Architecture (SOA)	-	The Solution'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.									

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NFR-INTA-023	Integration Architecture	Service Oriented Architecture (SOA)	-	The Solution shall provide assistance for deploying applications with SOA and event-driven architecture in a manner that supports the following implementation strategies: i. 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. ii. Representational State Transfer (REST): Support for XML-based message processing as well as HTTP, and XHTML.									
NFR-INTA-024	Integration Architecture	Service Oriented Architecture (SOA)	SOA Governance	The contractor shall define SOA governance processes for the following domains but not limited to: i. Service Portfolio Management ii. Services Technical Architecture iii. Service Design & Development iv. Configuration & Release Management v. Contract Management vi. Service Monitoring & Control vii. Incident Management viii. Change Management ix. Role based access controls									
NFR-INTA-025	Integration Architecture	Service Oriented Architecture (SOA)	SOA Governance	The contractor shall be responsible for building and supporting frameworks and extensible tools that enable the design, configuration, assembly, deployment, monitoring, and management of software designed around an SOA.									
NFR-INTA-026	Integration Architecture	Service Oriented Architecture (SOA)	SOA Governance	The Solution shall integrate with a service registry and repository to serves as an integration point for runtime tooling.									
NFR-INTA-027	Integration Architecture	Service Oriented Architecture (SOA)	SOA Governance	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, confidentiality, integrity, and availability)									
NFR-INTA-028	Integration Architecture	Service Oriented Architecture (SOA)	-	The Solution shall incorporate a reference information model allowing for interoperability and integration across the HCFA's portfolio of systems. The reference information model shall be National Information Exchange Model (NIEM) and MITA conformant.									
NFR-INTA-029	Integration Architecture	-	-	The Solution's interfaces shall employ NIST and industry standard best practices to secure and protect the data and the associated infrastructure from a confidentiality, integrity, and availability perspective.									
NFR-INTA-030	Integration Architecture	-	-	The Solution shall have the capability to log and notify the system administrators/system support staff if an interface is not available for any particular reason. The notification and issue(s) shall be invisible to the applicant/beneficiary/client. Specifics of notification to be determined in design sessions.									
NFR-INTA-031	Integration Architecture	-	-	The Solution shall provide the capability to detect and remediate errors caused by batch processing and real time processing via user defined rules.									
NFR-INTA-032	Integration Architecture	-	-	The Solution shall provide the capability to perform source to destination file integrity checks for exchange data and log, notify, and alert appropriate parties with issues.									
NFR-INTA-033	Integration Architecture	-	-	The contractor shall describe the interface management approach and methodology used for the solution project.									

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NFR-INTA-034	Integration Architecture	-	-	<p>The contractor shall incorporate an interface management approach into a comprehensive Interface Management Plan for all interface mechanisms used for the Solution (e.g. batch, ESB/web services). The Interface Management Plan will be used by HCFA to document the plan for integrating the Solution with all systems internal and external to the HCFA. The Interface Management Plan shall, at a minimum, document the following areas:</p> <p>i. The approach to developing and managing internal and external interfaces. ii. Technical tools that will be used for data transformation, transport and error recovery. iii. A description of how the SI's development standards will be reconciled, to reflect use of ESB and web services as wrappers to legacy systems. The contractor should produce example scenarios for integration reflecting their infrastructure components and toolset. iv. Tasks, deliverables and resources necessary to complete interface development and implementation. v. Description of how the solution development and test systems will work with the external interfaces. vi. Descriptions of the process for managing changes to the interfaces, both in the production and non-production environments. vii. List of solution interfaces, data format, frequency of updates and expected data volume. viii. Process for interfacing and collaborating with interface partners, including roles, responsibilities, deliverables and timelines. ix. How the State development and test systems shall work with the external non-production interfaces.</p>									
NFR-INTA-035	Integration Architecture	-	-	The contractor shall validate that each interface is working correctly. The contractor will repair all interface-related problems caused by SI-developed interfaces.									
NFR-INTA-036	Integration Architecture	-	-	The contractor shall assist HCFA in identifying root causes for all Solution interface related problems.									
NFR-INTA-037	Integration Architecture	-	-	The contractor shall document all interfaces with an Interface Control Document (ICD) as required by the State using a State approved template.									
NFR-INTA-038	Integration Architecture	-	-	The Solution shall employ an integration layer based on open standards for external messaging and service interaction.									
NFR-INTA-039	Integration Architecture	-	-	The Solution shall meet the MITA requirements for a modular design and the use of Service Oriented Architecture (SOA) and Enterprise Service Bus (ESB).									
NFR-INTA-040	Integration Architecture	-	-	The Solution shall ensure interface pathways do not be adversely affect other activities, such as regular operations, other jobs, reporting, queries, analytics, and ETL.									
NFR-INTA-041	Integration Architecture	-	-	The Solution shall reuse existing (legacy) interface connectivity and specifications (e.g. file layout, web service specification etc.) where appropriate and required by the State									

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NFR-DA-001	Data Architecture	Audit and Compliance	-	The Solution shall provide audit controls including and not limited to the following: i. User interfaces ii. Operation of the DBMS iii. Database administration v. Data definition and documentation ix. Security and access. Organizational policies and priorities x. Backup and recovery xi. Business continuity xii. Compliance with standards and requirements									
NFR-DA-002	Data Architecture	Audit and Compliance	-	The Solution shall produce an accessible transaction and audit trails that is human readable and meet standards outlined in the State's security plan.									
NFR-DA-003	Data Architecture	Audit and Compliance	-	The Solution shall use history tracking within the database and logging options (e.g., transaction auditing)									
NFR-DA-004	Data Architecture	Audit and Compliance	-	The Solution shall where possible employ a software agent that run the data server, enabling a policy-based data access compliance and monitoring.									
NFR-DA-005	Data Architecture	Audit and Compliance	-	The Solution shall ensure all modules have plans and procedures in place to meet audit and compliance requirements for the Eligibility System									
NFR-DA-006	Data Architecture	-	-	The Solution shall allow for a unique public identifiers for key data records that are consistent and of sufficient length to allow for unique values throughout the life of the Solution. The Solution shall allow for a generation of a check digit to be appended to the public identifiers.									
NFR-DA-007	Data Architecture	-	-	The Solution shall allow public identifiers to be displayed on screens and in correspondence with a reader friendly format mask / template (e.g., 123-12-3232-8, 123-122-123-A) but stored in the database without formatting characters or check digit.									
NFR-DA-008	Data Architecture	-	-	The Solution shall allow screen input fields to accept public identifiers, with or without format mask characters, and the logic shall be smart enough to strip out any formatting characters prior to performing database actions.									
NFR-DA-009	Data Architecture	-	-	The Solution shall allow public identifiers to be immutable (cannot be changed) but if record instances are merged, for example, then it is possible that a given entity instance will have multiple identifiers. When an entity has multiple identifiers, one identifier shall be considered the prime (master) identifier and used in ongoing correspondence, etc. However, all identifiers remain valid (just no longer "published") and can be used in search screens to find entity occurrences.									
NFR-DA-010	Data Architecture	-	-	The Solution shall allow the data model to follow consistent and logical naming standards.									
NFR-DA-011	Data Architecture	-	-	The Solution shall allow for the tracking of last-accessed-by and last-accessed timestamp for record retention and archiving in a way that minimally impact system performance.									
NFR-DA-012	Data Architecture	-	-	The Solution shall allow data elements the track the created-by, creation timestamp, last-updated-by and last-updated timestamp.									
NFR-DA-013	Data Architecture	-	-	The contractor shall provide the Conceptual, Logical and Physical models for the solution in source format and other formats designated by State.									
NFR-DA-014	Data Architecture	-	-	The Solution shall comply with Information Model data standards, including but are not limited to: i. Data format and content standards ii. Consistent definition of data elements in all data stores									
NFR-DA-015	Data Architecture	-	-	The contractor shall provide to the State data flow diagrams including but not limited to the following: i. Node to node traffic (from data source to data destination) including all data repositories and pass-through systems involved ii. Between various logical elements of a particular unique solution or application (e.g., link between front-end and back-end elements)									
NFR-DA-016	Data Architecture	-	-	The contractor shall provide a data classification plan/document to the State.									
NFR-DA-017	Data Architecture	-	-	The contractor shall provide data model diagrams i.e. Entity Relationship diagram to the State.									
NFR-DA-018	Data Architecture	Data Exchanges	-	The Solution shall have the capability to provide data and access to other Solutions that are part of the enterprise service.									

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NFR-DA-019	Data Architecture	Data Exchanges	-	The Solution shall have the ability to use secure File Transfer Protocol (FTP) to accommodate file transfers including but not limited to the following: i. Transport Layer Security (TLS) ii. Secure Electronic Transaction (SET) iii. Secure Copy (SCP)									
NFR-DA-020	Data Architecture	Data Exchanges	-	The Solution shall provide the ability to import/export data. (e.g. Open Data Base Connectivity [ODBC]-compliant and/or other generally accepted formats.)									
NFR-DA-021	Data Architecture	Data Exchanges	-	The Solution shall provide the ability to leverage the Federal Data Services Hub(FDSH) to provide 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 State level.									
NFR-DA-022	Data Architecture	Data Exchanges	-	The Solution shall have the ability to request (retrieve), access and store data from the following sources including but not limited to: i. Federal Data Services Hub (FDSH) ii. Department of Homeland Security (DHS) iii. Internal Revenue Service (IRS) iv. Medicaid Management Information System (MMIS) v. TN Department of Labor and Workforce vi. TN Benefits and Administration vii. National Institutes of Health (NHI) viii. National Association for Public Health Statistics and Information Services? (NAPHSIS) x. TN Department of Corrections									
NFR-DA-023	Data Architecture	Data Exchanges	-	The contractor shall provide a data dictionary and data schemas to the State.									
NFR-DA-024	Data Architecture	Data Exchanges	-	The Solution shall allow for files received through secure FTP to be stored in a secure file repository where access can be audited.									
NFR-DA-025	Data Architecture	Data Management	-	The Solution shall provide the ability to perform real-time electronic address verification and address validation against addresses in US postal database.									
NFR-DA-026	Data Architecture	Data Management	Data Retention	The contractor shall develop and execute a record retention schedule in accordance with federal and state regulations as approved by HCFA and with minimal impact to system performance and availability.									
NFR-DA-027	Data Architecture	Data Management	Data Retention	The Solution shall maintain records and supporting documentation under audit or involved in litigation for a length for time as determined by the State.									
NFR-DA-028	Data Architecture	Data Management	Data Retention	The Solution shall have the ability to re-establish an aged record (unarchive).									
NFR-DA-029	Data Architecture	Data Management	Data Retention	The Solution shall adhere to security and audit controls applying to storage, backup, retrieval, and viewing of archive data records including to not limited to secure and encrypted storage, encrypted backups, and audit trail.									
NFR-DA-030	Data Architecture	Data Management	Data Retention	The Solution shall include the ability to list an inventory of records included in purge / archive as a report. Where applicable, the purge process shall executed in a way the enables the audit trail to capture the event.									
NFR-DA-031	Data Architecture	Data Management	Data Retention	The Solution shall maintain an archival process so that accumulated historical records and log files do not consume large amounts of disk space and adheres to tiered data storage.									
NFR-DA-032	Data Architecture	Data Warehouse	-	The Solution 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.									
NFR-DA-033	Data Architecture	Data Warehouse	-	The Solution is envisioned as having an OLTP database, and data warehouse. The contractor shall develop a business intelligence data warehouse or data mart.									
NFR-DA-034	Data Architecture	Data Warehouse	-	The Solution shall populate the data warehouse so that it minimally includes data from: i. The OLTP database ii. Data from any ancillary databases, e.g., any decoupled CRM system. iii. Operational data from inbound document processing									
NFR-DA-035	Data Architecture	DBMS	-	The Solution shall include a data warehouse that is no more than 24 hours behind the main OLTP database.									
NFR-DA-036	Data Architecture	DBMS	-	The Solution shall use a Relational Database Management System (RDBMS) to support OLTP, batch processing ,mixed workloads and business intelligence.									
NFR-DA-037	Data Architecture	DBMS	-	The Solution shall allow referential integrity enforcement to be enabled in the OLTP database unless there is an exception scenario that is approved by HCFA.									
NFR-DA-038	Data Architecture	DBMS	-	The Solution shall provide the ability for concurrent users to simultaneously view the same record, documentation and/or template.									

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NFR-DA-039	Data Architecture	DBMS	-	The Solution shall implement optimistic locking or a similar protection to maintain the integrity of data during concurrent access where one user may update may overlay another update.									
NFR-DA-040	Data Architecture	DBMS	-	The Solution shall support online modifications to database structures with minimal system downtime.									
NFR-DA-041	Data Architecture	DBMS	-	The Solution 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 to support high availability and recovery point and time objectives)									
NFR-DA-042	Data Architecture	DBMS	-	The Solution shall provide standard data extraction APIs and utilities to allow secure and efficient import and export of data.									
NFR-DA-043	Data Architecture	DBMS	-	The contractor shall provide configuration and operations documentation including, but not limited to optimum database configuration settings, patching procedures, client maintenance, and change control.									
NFR-DA-044	Data Architecture	DBMS	-	The Solution shall handle load balancing, failover and/or clustering ability for extended scalability and performance.									
NFR-DA-045	Data Architecture	DBMS	-	The contractor shall provide a capacity planning model for database configuration.									
NFR-DA-046	Data Architecture	DBMS	-	The Solution shall support advanced configurations for data caching (e.g., support of client/application caching, support of server caching, etc.)									
NFR-DA-047	Data Architecture	DBMS	-	The Solution shall be fully ACID (Atomicity, Consistency, Isolation, Durability)- compliant so as to ensure it handles transaction rollbacks, validity and referential integrity checks, etc.									
NFR-DA-048	Data Architecture	DBMS	-	The Solution shall support indexing technology (multiple types of indexing shall be available to tune performance of SQL statements).									
NFR-DA-049	Data Architecture	DBMS	-	The Solution shall be able to manage multiple query queue entries in parallel.									
NFR-DA-050	Data Architecture	DBMS	-	The Solution shall offer tools to manage and control disparate mixed workloads in a Database Management Solution (DBMS) environment.									
NFR-DA-051	Data Architecture	DBMS	-	The Solution must have the ability to provide for a capability for a "Separation of Duties " between the database administrator and the security administrator such that database security controls and audit logs may not be altered or disabled without the collusion of the two administrator roles.									
NFR-DA-052	Data Architecture	DBMS	-	The Solution shall have full, incremental and transaction log backup and recovery capabilities on both a regular schedule and an ad hoc basis, including but not limited to redundant incremental off-site backups and a monthly demonstration of back-up capabilities									
NFR-DA-053	Data Architecture	DBMS	-	The Solution shall provide the capability to remain fully-functional during database backup windows.									
NFR-DA-054	Data Architecture	DBMS	-	The Solution shall store appropriate data in an industry standard commercially available relational database that supports referential integrity rules.									
NFR-DA-055	Data Architecture	DBMS	-	The Solution shall provide Standard Query Language (SQL) capabilities for database queries based on security role and protocols.									
NFR-DA-056	Data Architecture	DBMS	-	The contractor shall provide DBMS performance and benchmark stats based on the purposed DBMS OS.									
NFR-DA-057	Data Architecture	Extract, Transform, Load (ETL)	-	The Solution shall provide database tools that include, but are not limited to: SQL performance logging and monitoring; SQL access path analysis with tuning advisory capabilities.									
NFR-DA-058	Data Architecture	Extract, Transform, Load (ETL)	-	The Solution shall have the ability to convert message formats and translate coded data within messages.									
NFR-DA-059	Data Architecture	Extract, Transform, Load (ETL)	-	The Solution shall provide support for a metadata repository for data and message conversion and transformations.									
NFR-DA-060	Data Architecture	Extract, Transform, Load (ETL)	-	The Solution shall provide the technology to implement processing logic that can manipulates data values, and the representation of those values for transport or conversion purposes. This processing logic is used to establish a common meaning of data, improve data quality or federate data from multiple sources.									
NFR-DA-061	Data Architecture	Extract, Transform, Load (ETL)	-	The Solution shall provide tools for data source and target connectivity: Adapters for a range of source types beyond Relational Database Management Solutions (RDBMS's) and legacy databases (access to data stored in non-relational structures - for example, VSAM files and IMS databases), including packaged applications and Web services, and the ability to interpret (as a source and a target) XML structures, and flat files.									

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NFR-DA-062	Data Architecture	Extract, Transform, Load (ETL)	-	The Solution shall provide tools to support the Extract-Transform-Load (ETL) process that includes but is not limited to the following the following: i. Extracting data from data sources. ii. Transforming it to fit business needs (which can include quality levels). iii. Data validation and verification check prior to target data store. iv. Loading it into the target data store. v. 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. vi. Verbose ETL process logging to allow for ease of support and debugging. vii. Multi-threaded parallel operations to support high volume throughput viii. Support for SQL Merge or equivalent construct to enable efficient Insert, Update processing for incremental loads to target database and enable restart with backing out changes in the event a load fails mid-stream ix. Smart / checkpoint restart to enable complex jobs to restart at point of failure and resume where they left off									
NFR-DA-063	Data Architecture	Extract, Transform, Load (ETL)	-	The Solution shall have the ability to load data in a variety of approaches including but not limited to the following: i. Bulk data extraction and loading ii. Granular trickle-feed acquisition and delivery iii. Changed-data capture (ability to identify and extract modified data) iv. Event-based acquisition (time-based or data-value-based)									
NFR-DA-064	Data Architecture	Extract, Transform, Load (ETL)	-	The Solution shall include but not limited to the following types of transformation: i. Simple transformations such as data-type conversions, string manipulations and Simple calculations ii. Moderate-complexity transformations, such as lookup and replace operations, aggregations, summarizations, deterministic matching and management of slowly changing dimensions iii. Higher-order transformations, such as sophisticated parsing operations on free-form text and rich media Facilities for developing custom transformations and extending packaged transformations iv. Facilities for developing custom transformations and extending packaged transformations									
NFR-DA-065	Data Architecture	Master Data Management	-	The Solution shall adhere to all ETL requirements for historical data conversions from the legacy system to the proposed new system.									
NFR-DA-066	Data Architecture	Master Data Management	-	The Solution shall support identification of a unique person, where multiple records can exist using the matching service provided by Master Person Index (MPI).									
NFR-DA-067	Data Architecture	Master Data Management	-	The Solution shall be configured in such a way that changes applicant information that are shared with the MPI, MMIS, and other partner systems remain in synchronization.									
NFR-DA-068	Data Architecture	Data Management	Metadata Management	The Solution shall be able to submit new member/applicant records to the MPI. The member/applicant record may include: i. Identification ii. Demographics iii. Contact information iv. Relationships to the member									
NFR-DA-069	Data Architecture	Data Management	Metadata Management	The Solution shall create and document a consistent XML taxonomy that uses the same XML tags and attributes for the same data elements and concepts. The taxonomy should be based on National Information Exchange Model(NIEM). The taxonomy shall be used to in define data exchanges but there shall be an English language overview of the approach, organization, standards, key elements, naming patterns, abbreviations, etc.									
NFR-DA-070	Data Architecture	Data Management	Metadata Management	The Solution shall provide comprehensive metadata management from source to target in a single metadata repository. The metadata repository shall include but not be limited to the following information: 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.									

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NFR-INFA-001	Infrastructure Architecture	Data Centers	-	The Solution shall be hosted at HCFA data centers managed by STS. The equipment cost, including the disaster recovery site, shall be included in the SI's proposal. The contractor shall submit to HCFA as part of their proposal, specifications for all necessary hardware, software and tools for the project. In addition to systems monitoring and management, development support tooling, and project management tooling environments the contractor shall propose application environments for a minimum of the environments listed below. For the Development and Testing environments the vendor should include environments to support two concurrent releases in development plus a regular maintenance release for a total of three sets of Development and Testing environments. The contractor may propose to share environments for multiple purposes and to share components such as Address Verification across multiple environments. Each environment will include three web portals: Worker; Partner; and Member. The contractor may also propose additional application environments based on their development methodology and the understanding of the project roadmap. The minimum environment set (a total of 41 environments) the contractor shall submit specifications for are as follows:									
NFR-INFA-002	Infrastructure Architecture	Hosting Environment	-	<ul style="list-style-type: none"> i. Production (1) ii. Staging / Penetration Testing (1) iii. Technical Sandbox (1) iv. Development (3 of each of the following) <ul style="list-style-type: none"> - Development - Interface Development - Unit / Automated test - Component Integration Test - Data Conversion Development v. Test (3 of each of the following) <ul style="list-style-type: none"> - System Integration Test - Functional Test - Automated Regression Test / QA - Interface Test - Performance / Stress Test 									
NFR-INFA-003	Infrastructure Architecture	Hosting Environment	-	Environments that contain production data shall be hosted at the State data center managed by the State Strategic Technology Solutions group. The contractor may propose to host other environments, subject to the approval of HCFA.									
NFR-INFA-004	Infrastructure Architecture	Hosting Environment	-	The Solution shall provide tools to automate the migration of code, configuration, security roles, and data between environments including but not limited to: <ul style="list-style-type: none"> i. Conversion Testing Environment ii. Performance Testing Environment iii. UAT Environment 									
NFR-INFA-005	Infrastructure Architecture	Hosting Environment	-	The Solution shall include an infrastructure management module to allow system administrators to perform tasks such as but not limited to: <ul style="list-style-type: none"> i. Creating application server domains ii. Deploying applications or components iii. Migrating domains from development environments to production environments iv. Monitoring and configuring the performance of the application server domain v. Diagnosing and troubleshooting problems 									
NFR-INFA-006	Infrastructure Architecture	Hosting Environment	-	The contractor is responsible for implementing, managing, and the operations and maintenance of the software solution and tools purchased under the contract in the data center(s) as defined by HCFA.									
NFR-INFA-007	Infrastructure Architecture	Hosting Environment	-	The contractor is responsible for maintaining all DDI environments, software, and tools purchased under the contract for all environments.									
NFR-INFA-008	Infrastructure Architecture	Hosting Environment	-	The Solution's application server design shall provide scalability and reliability for applications by distributing the work load among multiple instances of the server for each of the critical components in the solution design.									

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NFR-INFA-009	Infrastructure Architecture	Hosting Environment	-	<p>The contractor shall develop a technical infrastructure document which describes all of the hardware, system software and tools necessary for each of the environments proposed, which shall include but not limited to:</p> <ul style="list-style-type: none"> i. A comprehensive system assets inventory (hardware, software, services, processes, configuration, etc.) preferably maintained and managed through a centralized Configuration Management Database (CMDB). ii. A detailed product currency and license inventory preferably maintained and managed through a centralized Configuration Management Database (CMDB). a. List of all software licenses, current installations version, latest version (for each particular product), and next target installation version (e.g., we recently upgraded Oracle to 11.2.0.4 version although the latest version is 12.c) b. Software end-of-life c. Software end-of-support iii. Network connectivity diagrams a. Entire network diagram representing physical and logical links between nodes (e.g., servers, load balancers, firewalls, etc.) b. Secure boundary representation diagrams iv. Network configuration inventory, preferably maintained and managed through a centralized Configuration Management Database (CMDB). a. IP management (subnets, VLANs, IP assignment inventory, etc.) b. Network ports in use c. Network protocols in use d. Secure tunnels e. Certificates V. Data flow diagrams a. Node to node traffic (from data source to data destination) including all data repositories and pass-through systems involved b. Between various logical elements of a particular unique solution or application (e.g., link between front 									
NFR-INFA-010	Infrastructure Architecture	Hosting Environment	-	The contractor shall utilize STS procedures and services to establish offsite Disaster Recovery capabilities.									
NFR-INFA-011	Infrastructure Architecture	Hosting Environment	-	The Solution 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.									
NFR-INFA-012	Infrastructure Architecture	Hosting Environment	-	The Solution must allow for user analytics to be captured and reported.									
NFR-INFA-013	Infrastructure Architecture	Hosting Environment	-	The contractor shall provide detailed processes to refresh each environment to support the recreation of the environments and to support diagnostics and problem resolution as necessary.									
NFR-INFA-014	Infrastructure Architecture	Disaster Recovery	-	<p>The contractor shall provide HCFA with the following documentation:</p> <ul style="list-style-type: none"> i. Integrated business continuity plan ii. Disaster recovery plan iii. Contingency plan in the event of a disaster 									
NFR-INFA-015	Infrastructure Architecture	Disaster Recovery	-	The contractor shall provide specifics on recovery of business processes and system recovery procedures whose topics include but are not limited to: steps required to recover the application and its; the order of recovery steps; and verification processes. The contractor shall participate in post Disaster Recovery testing activities and provide reports certifying the achievement of RTO and RPO objectives as well as readiness of the DR system to support business operations.									
NFR-INFA-016	Infrastructure Architecture	Disaster Recovery	-	The Solution shall leverage virtualization to expedite disaster recovery by enabling system owners to quickly reconfigure system platforms without having to acquire additional hardware.									
NFR-INFA-017	Infrastructure Architecture	Disaster Recovery	-	The contractor shall develop a High Availability & Disaster Recovery Plan for the entire solution driven by HCFA's defined Service Level Agreement (SLA), Recovery Time Objective (RTO), and Recovery Point Objective (RPO).									
NFR-INFA-018	Infrastructure Architecture	Disaster Recovery	-	The Solution shall use offsite storage to enable a full recovery of the application and its data in the event of a disaster that destroys the primary data center. Data backup files and transaction logs shall be stored offsite in the event of a physical disaster. The frequency of the transmission of backup files and transaction logs shall be sufficient to meet the system RPO.									
NFR-INFA-019	Infrastructure Architecture	Disaster Recovery	-	The Solution shall have the ability to support either a production and hot (real time replication) disaster recovery design or a multi host site production design.									
NFR-INFA-020	Infrastructure Architecture	Disaster Recovery	-	The contractor shall conduct a semi-annual review (or on schedule determined by HCFA) and update of the Disaster Recovery Plan throughout the life of the contract.									
NFR-INFA-021	Infrastructure Architecture	Disaster Recovery	-	The contractor shall participate in regularly scheduled (as scheduled by HCFA) disaster recovery exercise and meeting throughout the life of the contract.									

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NFR-INFA-022	Infrastructure Architecture	-	-	The Solution shall align with the "Zoned Architecture" defined in CMS Exchange Reference Architecture: Foundation Guidance.									

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NFR-DC-001	Data Conversion	-	-	The Contractor shall coordinate and is responsible for work the State and Other State Contractors to develop a data migration and conversion plan describing the approach, strategy, constraints, assumptions and specification for converting and migrating from current legacy sources.									
NFR-DC-002	Data Conversion	-	-	The contractor vendor shall provide a data conversion strategy and data conversion plan that will include but is not limited to the following: i. Identify source and target systems/environments ii. Identify locations involved in the conversion effort Provide for a non-disruptive conversion (no or minimal down-time) iii. Describe any automated method of conversion that require limited intervening by the State iv. Describe and addresses security measures that will enforce referential integrity of all data v. Implement a mechanism for identifying and reporting conversion errors vi. Implement a mechanism for error resolution vii. Implement a method to reconcile data and differentiate between converted data versus new system data. viii. Provide a capability of automatically reverse or undo a conversion ix. Identify conversion verification procedures and activities required for system testing. Identify the testing of tools and scripts, and the validation and verification of resulting test data, in preparation for data loading. x. Provide a mapping of the source to destination, considering intermediate processing requirements. xi. Data Cleansing process xii. Frequency of data conversion in all environments such CIT/SIT, UAT and Production xiii. Sequencing of data loads xiv. Data Conversion Schedule xv. Role and Responsibilities xvi. Identify if parallel runs of the old and new systems will be necessary during the conversion process, or if there will be a one-time cut-over to the new system. xvii. Identify criteria for a Go/No-Go decision. xviii. Assumptions xix. Risks List of tools needed to execute the conversion Strategy for data quality assurance and control									
NFR-DC-003	Data Conversion	-	-	The contractor Vendor shall assist at the direction of the State in the development of manual conversion procedures for loading data that can not load to the target new system environment using an automated conversion process.									
NFR-DC-004	Data Conversion	-	-	The contractor Vendor shall provide a detailed data element mapping crosswalk between the data source and the data target.									
NFR-DC-005	Data Conversion	-	-	The contractor Vendor shall produce a before and after conversion report to the State which will include but is not limited to the following: i. Conversion count ii. Conversion errors iii. Error rate v. Data type conversion source type to native type failures vi. Validation and completeness for conversion									
NFR-DC-006	Data Conversion	-	-	The contractor Vendor shall complete a number of error free data conversions, as determined by the State, in the production environment prior to go live									
NFR-DC-007	Data Conversion	-	-	The contractor Vendor shall reconcile any errors produced from any data conversion run									
NFR-DC-008	Data Conversion	-	-	The contractor Vendor shall ensure that the results of the data conversion process is that any given member Medicaid healthcare coverage will remain in place before and after the production data conversion									
NFR-DC-009	Data Conversion	-	-	The contractor Vendor shall ensure that converted data following the protect and privacy protocols established by the SSP and security control outlined by the State and security compliance regulations. Security measures should be enforced regarding data sensitivity issues.									
NFR-DC-010	Data Conversion	-	-	The contractor Vendor shall identify the data cleansing, validating, and initiating requirements for the data conversion activities.									
NFR-DC-011	Data Conversion	-	-	The contractor Vendor shall provide a data conversion workflow allowing for HCFA Staff to continue work.									
NFR-DC-012	Data Conversion	-	-	The contractor Vendor shall provide a project plan that describes the timeline of activities of the contractor Vendor and the State, to begin shortly after contract award, to complete conversion at implementation.									

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NFR-DC-013	Data Conversion	-	-	The contractor Vendor shall provide to the State a list of data conversion tools and scripts to perform data conversion, intermediate data processing and loading cleansed data into the destination (target) data repository. This would include both automated conversion program and manual procedures (data entry procedures).									
NFR-DC-014	Data Conversion	-	-	The contractor Vendor shall provide the capability to automatically reverse or undo a conversion by conversion group e.g., entity Case and associated database entities as defined by the State.									
NFR-DC-015	Data Conversion	-	-	The contractor Vendor shall provide a method to reconcile converted data and differentiate between converted data versus the target system data									
NFR-DC-016	Data Conversion	-	-	The contractor Vendor shall provide a schedule of conversion activities to be accomplished in accordance with the Data Conversion Plan and approved the data including but not limited to the following: i. Time allotted/allowed to complete the conversion process in each environment. ii. Time allowed to Normalized the data from the source (legacy) to the target.									
NFR-DC-017	Data Conversion	-	-	The Contractor shall be responsible for coordinating, addressing and reconciling with the State any data quality assurance and control issues prior to a given data conversion cycle. In addition, the Contractor shall be responsible for identifying types of data quality problems that may occur, including but not limited to the following considerations: i. Invalid Content ii. Data Type re-definitions (e.g., alphas in dates and numbers data field) iii. Incomplete Content (e.g., un-initialized data)									
NFR-DC-018	Data Conversion	-	-	The contractor bidder shall be responsible for running a sufficient number of mock data conversions in production achieving a 100% pass rate for each data conversion run. Each mock conversion should simulate the real go-live process with actual data volumes.									
NFR-DC-019	Data Conversion	-	-	The contractor Vendor shall provide the capability to conversion data from several source(s) e.g., scanned documentation such as Notices, Pay Stubs, Case Notes and Verification paper documents for the existing legacy system to the new proposed system.									
NFR-DC-020	Data Conversion	-	-	The contractor Vendor shall not use synthetic data or use estimated data in production for missing data e.g., baby SSN, birth date without written approval by the State.									
NFR-DC-021	Data Conversion	-	-	The contractor Vendor shall provide an approach to a phase approach to data conversion									
NFR-DC-022	Data Conversion	-	-	The contractor Vendor shall be responsible for identifying and describing the boundaries and scope of the data conversion. Including but not limited to specific system functions, and ad hoc user access database(s) and providing a high-level mapping of the data and data types to be converted or migrated to the new system									

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NFR-AS-001	Accessibility	-	-	The Solution shall satisfy the Priority 1 Checkpoints from the current Web Content Accessibility Guideline developed by the World Wide Web Consortium (W3C), as detailed at: http://www.w3c.org/TR/WCAG10/full-checklist.html									
NFR-AS-002	Accessibility	-	-	The Solution shall be compliant with the Americans with Disabilities Act (ADA)									
NFR-AS-003	Accessibility	-	-	The Solution shall be compliant with the Section 508 amendment to the 1973 Rehabilitation Act where as all web content be accessible to people with disabilities.									
NFR-AS-004	Accessibility	-	-	The Solution shall have an accessibility testing solution that incorporates the use of assistive technologies. The contractor shall provide an ADA compliance report.									

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NFR-MA-001	Manageability	-	-	The contractor shall propose one or more Commercial Off the Shelf (COTS) monitoring tools to proactively monitor the performance, track progress and facilitate decision making of key application components and services of the proposed solution. The State of Tennessee and HCFA have not identified a preference for a performance management toolset.									
NFR-MA-002	Manageability	-	-	The contractor shall provide, configure and operate COTS tool(s) (The COTS tool(s) should be generally available and have adapters to various vender products) to detect errors related to components including but not limited to network connectivity interruptions, a database server going off line, or web service connectivity etc.									
NFR-MA-003	Manageability	-	-	The Solution shall have safeguards designed to ensure that configuration variables affecting applications and the back end resources remain at some predetermined configuration settings. The configuration shall not be mixed with application data.									
NFR-MA-004	Manageability	-	-	The Solution shall provide, configure and operate third party COTS tool(s) to detect application performance issues, such as degraded servlet, database or other back end resource response times and alert system administrators.									
NFR-MA-005	Manageability	-	-	The Solution shall provide, configure and operate COTS tool(s) to monitor key performance indicators (KPIs) metrics such as but not limited to response time, resource availability, CPU utilization, and memory utilization reaches thresholds etc.									
NFR-MA-006	Manageability	-	-	The Solution shall send alerts based on the monitored attributes. These can be escalated through E-Mail / SMS etc.									
NFR-MA-007	Manageability	-	-	The Solution shall provide diagnostic information on performance and availability issues identified through performance monitoring.									
NFR-MA-008	Manageability	-	-	The Solution shall provide a performance dashboard(s) 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.									
NFR-MA-009	Manageability	-	-	The Solution's performance dashboard(s) shall allow the HCFA personnel to perform monitoring and administrative activities through graphical user interfaces. The solution shall have the capability to create custom dashboards to empower the users .									
NFR-MA-010	Manageability	-	-	The Solution's management module shall support role based access to allow for different roles for users including operators, administrators, and managers etc. The Solution management module shall have the capability of configuration role-based access control including but limited to access to network traffic monitoring data or making a configuration change by Administrator role									
NFR-MA-011	Manageability	-	-	The Solution shall allow for report generation and analysis for application troubleshooting and capacity planning.									
NFR-MA-012	Manageability	-	-	The Solution shall provide configurable logging levels, filtering and reporting options for errors and exceptions.									
NFR-MA-013	Manageability	-	-	The Solution shall provide the ability for a centralized log of prescribed system events and provide correlated logs if the logs are produced by multiple system components in the Solution.									
NFR-MA-014	Manageability	-	-	The Solution shall ensure system error messages appear in a consistent format for both batch and on-line processing. Specifically, error messages have like codes and texts.									
NFR-MA-015	Manageability	-	-	The Solution shall provide descriptive error messages.									
NFR-MA-016	Manageability	-	-	The Solution shall produce error statistics by module, transaction and source.									
NFR-MA-017	Manageability	-	-	The Solution shall capture rejected or un-posted transactions for administrative user resolution.									

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NFR-RE-001	Reliability	-	-	The Solution shall provide high availability for the all system components that meets HCFA's specified operations periods on a 24x7 basis.									
NFR-RE-002	Reliability	-	-	The Solution shall provide real-time or near real-time availability of information across all systems dictated by HCFA									
NFR-RE-003	Reliability	-	-	The Solution shall use server clustering to allow transfer of load when a server or application goes down.									
NFR-RE-004	Reliability	-	-	The Solution shall be architected with no single point of failure, supporting fault tolerance and failover of web, application, database servers, storage devices, and secondary devices such as load balancers, and supporting a high-availability enterprise.									
NFR-RE-005	Reliability	-	-	The Solution shall support session replication and transparent failover in a server cluster.									
NFR-RE-006	Reliability	-	-	The Solution's Recovery Time Objective (RTO) shall be within 4 hours. In case of a disaster that affects the system operations, the entire service shall be restored within 4 hours.									
NFR-RE-007	Reliability	-	-	The Solution's Recovery Point Objective (RPO) shall be no more than 1hr of data loss. In case of a disaster that affects the system operations, 1hr of data inputs to the system (but no more) may be lost and need to be re-entered.									
NFR-RE-008	Reliability	-	-	The Solution shall use fully redundant network, hardware and storage.									
NFR-RE-009	Reliability	-	-	The Solution shall use virtualization where possible in their design and be prepared to create virtualized secured environments, that are highly available, sustainable, extendible, and portable.									
NFR-RE-010	Reliability	-	-	The Solution shall minimally display a well formatted informational message, complete with the portal's normal branding ,that asks the user to return at a later point in time when the public facing system is unavailable, for planned maintenance or because of a runtime issue.									
NFR-RE-011	Reliability	-	-	The Solution component and system shall be considered as unavailable if the online response time is a factor of three (3) greater than specified in the requirements.									
NFR-RE-012	Reliability	-	-	The Solution shall continue to operate when a user action results in communications with other systems (e.g., the federal hub or the HIX) regardless of the availability of the external system. For example, if the federal hub was unavailable then the citizenship and income verification would be deferred and the user would be notified of their possible options.									

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NFR-SC-001	Scalability	-	-	The Solution shall be scalable and adaptable to meet future growth and expansion/contraction needs such that the Solution can be expanded on demand and be able to retain its performance levels when adding additional users, functions, and data.									
NFR-SC-002	Scalability	-	-	The Solution shall have software and hardware that is upgradeable and preserves solution customizations.									
NFR-SC-003	Scalability	-	-	The Solution shall perform consistently and efficiently under normal and peak loads as defined by HCFA.									
NFR-SC-004	Scalability	-	-	The components in the Solution should be scalable both horizontally and vertically independently.									
NFR-SC-005	Scalability	Performance	-	The Solution shall allow the submit and redisplay, or navigation, of a web page to take less than two (2) seconds 95% of the time. For the most common user actions this shall be honored 99% of the time. No action or page shall take more than three (3) seconds.									
NFR-SC-006	Scalability	Performance	-	The Solution shall allow eligibility rules processing (Medicaid, CHIP etc.) to take less than 0.5 seconds for a household of five (5) people and less than 0.1 seconds for a single-person household. This performance shall include any time needed to fetch supporting data from the database and the round trip messaging to the rules engine.									
NFR-SC-007	Scalability	Performance	-	The Solution shall be designed to the greatest extent possible so that the performance/latency of the connectivity to external system(s) does not adversely affect the required performance, e.g., asynchronous and background messaging when a user action results in communications with other systems (e.g., the federal hub).									
NFR-SC-008	Scalability	Performance	-	The Solution shall allow pre-generated reports to be designed so that they can be rendered online in under 5 seconds, i.e., very large reports shall be broken into pages that allow incremental drill down and navigation and so do not adversely affect the network.									
NFR-SC-009	Scalability	Throughput	-	The Solution shall be able to support 2,000 concurrent internal users at the prescribed performance levels. This is an initial estimate that may be adjusted.									

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NFR-SU-001	Sustainability	-	-	The contractor shall ensure each of the COTS products in the Solution remain to be supported by COTS vendors at least six(6) years after planned go-live date. The contractor shall ensure each of the COTS products incorporated as part of the overall Solution will remain viable at least six years after the go live date.									
NFR-SU-002	Sustainability	-	-	The contractor shall ensure all the COTS components in the Solution to maintain compatibility at supported release levels.									
NFR-SU-003	Sustainability	Extensibility	-	The Solution 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.									
NFR-SU-004	Sustainability	Modularity	-	The Solution shall be designed for ease of maintenance and readily allow future functional enhancements as indicated by CMS Seven Conditions and Standards. This shall be accomplished through use of modern design principles for Service Oriented Architecture, applying principles of modularity, interface abstraction, and loose coupling.									
NFR-SU-005	Sustainability	Development Resources	-	The Solution shall take into account for availability of development resources. The contractor shall provide a skill inventory for development resources in all project phases. The contractor shall ensure and will be responsible for supplying a skill inventory of development resources for all phases of the project.									
NFR-SU-006	Sustainability	Maintainability	-	The Solution's screens shall be highly re-configurable, providing ability to reposition and rename field labels / data fields, remove or ?turn-off? unused fields, maintain data, sort lists and allow addition of custom-defined fields with minimum effort.									

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NFR-US-001	Usability	-	-	The Solution shall have "stacked "screens for data collection and maintenance of client/case data. Entering data on one screen should logically enable or disable other clients in the same household. In addition screens may require data to be re-edited or changed if the screen was left as incomplete or as a result of the change of data on another screen, e.g., changing an accommodation address may require the collection/update of utility expense information.									
NFR-US-002	Usability	-	-	The Solution shall provide visual cues for which screens are enabled or disabled.									
NFR-US-003	Usability	-	-	The Solution shall display lookup data in drop lists on screens where it is needed. Lookup data is simple data that can have a code and/or a sequence number identifier and a longer textual description.									
NFR-US-004	Usability	-	-	The Solution shall allow data in drop lists to typically be displayed on a screen sorted alphanumerically (in the chosen language).									
NFR-US-005	Usability	-	-	The Solution shall allow the alphanumerical sort order to be overridable, e.g., force USA to the top of a list of countries.									
NFR-US-006	Usability	-	-	The Solution shall allow the lookup data to indicate whether a user is able to select a particular value or whether it is only selectable by a system process.									
NFR-US-007	Usability	-	-	The Solution shall allow the lookup data to be logically deletable or end-datable so that a value no longer appears as an option in a drop list except if that value was previously selected on an existing data element.									
NFR-US-008	Usability	-	-	The Solution shall provide a user interface that shall be user friendly and consistent throughout all areas and functions of the Solution.									
NFR-US-009	Usability	-	-	The Solution shall use a Graphical User Interface (GUI) to help the public portal users navigate to the next logical step in the workflows. The Solutions shall all the workers (on the Worker Portal) to freely navigate to other parts of the solution functionality, and then allow the user to return to complete the in-process task.									
NFR-US-010	Usability	-	-	The Solution shall preserve context by design screens in logical sequence in order to maximize and enhance the user experience and solution usability.									
NFR-US-011	Usability	-	-	The Solution shall display the users' language, with words, phrases and concepts familiar to the targeted user groups as defined by HCFA, rather than solution-oriented terms.									
NFR-US-012	Usability	-	-	The Solution 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 following industry standards described in UX 2014.									
NFR-US-013	Usability	-	-	The Solution shall support undo and redo, or provide onscreen confirmation/acceptance to the user to confirm a change that is permanent and cannot be "undone" where appropriate.									
NFR-US-014	Usability	-	-	The Solution shall provide users with a clearly marked "escape" for the instances when a user mistakenly chooses a function and such "escape" must be simple with minimal dialogue.									
NFR-US-015	Usability	-	-	The Solution shall follow consistent conventions as determined by HCFA and limit the use of words, situations, or actions that have multiple meanings.									
NFR-US-016	Usability	-	-	The Solution shall detect common error conditions or check for them and present users with a confirmation option before they commit to the action.									
NFR-US-017	Usability	-	-	The Solution shall minimize the user's memory load by making objects, actions, and options visible where appropriate.									
NFR-US-018	Usability	-	-	The Solution shall provide the option to have rollover / tooltip help or context messages and provide the option to turn off this option in the user preferences profile.									
NFR-US-019	Usability	-	-	The Solution shall provide all user instructions in a visible or easily retrievable location (e.g. the help drawer in UX 2014 specification), when appropriate.									
NFR-US-020	Usability	-	-	The Solution 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.									
NFR-US-021	Usability	-	-	The Solution's error messages shall be expressed in plain language, precisely indicate the problem, and constructively suggest a solution.									
NFR-US-022	Usability	-	-	The Solution shall provide the option to use colors to enhance user experience and solution usability while complying with all disability requirements notated elsewhere in these requirements.									
NFR-US-023	Usability	-	-	The Solution shall allow the user to navigate to any functional component from a landing page.									
NFR-US-024	Usability	-	-	The Solution shall alert the user with information relevant to required next steps.									
NFR-US-025	Usability	-	-	The Solution shall accommodate point and click selection and check box entry for all relevant data entries where appropriate to ensure that the user does not have to enter textual data that may already be available to the system.									

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NFR-US-026	Usability	-	-	The Solution shall provide the ability to make fields enabled/disabled depending on parameters, user rights, and access controls.									
NFR-US-027	Usability	-	-	The Solution shall not show fields not accessible to a given user based on access rights, nor shall the Solution show fields not in use.									
NFR-US-028	Usability	-	-	The Solution shall provide validation checks by methods described in business rules.									
NFR-US-029	Usability	-	-	The Solution shall identify invalid entries to the user as immediately as possible.									
NFR-US-030	Usability	-	-	The Solution shall provide the ability to suggest or automatically format entries (e.g. telephone number, address etc.) that do not conform to data entry standards.									
NFR-US-031	Usability	-	-	The Solution shall be designed to include only the necessary information and functionality on screens for public and worker portal and shall be based on the user's access level and the user's configuration.									
NFR-US-032	Usability	-	-	The Solution shall provide screens for data entry with identified mandatory and optional data fields.									
NFR-US-033	Usability	-	-	The Solution shall allow incomplete data sets to be saved for completion of the workflow at a later time.									
NFR-US-034	Usability	-	-	The Solution 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.									
NFR-US-035	Usability	-	-	The Solution shall enable central workflow alerts and transactional status. The Solution shall centralize pending work items for the user as in a "work queue"									
NFR-US-036	Usability	-	-	The Solution shall have the capability to push messages to the intended workers without requiring them to specifically inquire for the data.									
NFR-US-037	Usability	-	-	The Solution shall ensure that the use of acronyms and codes are consistent with windows, screens, reports and databases or data dictionary.									
NFR-US-038	Usability	-	-	The Solution shall present searches that result in multiple pages of data in small groups of data with Next/Back paging capability									
NFR-US-039	Usability	-	-	The Solution shall allow the web site wherever appropriate to show progress via the use of Progress Bars.									
NFR-US-040	Usability	-	-	The solution shall utilize the concepts and design specifications demonstrated in the UX 2014 prototype to be leveraged where applicable.									

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					Out of the Box	Configuration	Custom Design and Development	Does not meet					
NFR-SP-001	Security	Data Protection and Privacy	-	The contractor shall, according to Federal and State regulations and policies in accordance with the guidance defined in MARS-E standard, design, document, develop, implement, operate, and maintain security controls over access to the sensitive data (e.g. PII, PHI, FTI, etc. from various sources that may include, but not limited to IRS and SSA) as defined the State and Federal policies and regulations (e.g. NIST-800 series and IRS-1075)									
NFR-SP-002	Security	Regulatory Compliance	-	The Solution shall be governed by HCFA's implementation of the CMS Expedited Life Cycle (XLC) gate review process. The contractor shall be responsible for preparing all the artifacts required by HCFA at each gate review and shall provide the HCFA all support necessary to represent the Solution at each gate review with CMS. The gate reviews and the artifacts required are governed by a Project Process Agreement (PPA). The contractor shall reference the Baseline PPA Document to the external reference documents.									
NFR-SP-003	Security	Regulatory Compliance	-	The State of Tennessee Strategic Technology Solutions (STS) group within the Department of Finance and Administration will provide secure hosting facilities and services for the Solution. The SI, under the oversight of HCFA, shall be responsible for coordinating, implementing, executing, and monitoring security related activities that involves a third-party vendor such as but not limited to STS and AHS. HCFA employees shall be involved in all communications with third-party vendors.									
NFR-SP-004	Security	Regulatory Compliance	-	The contractor shall employ a risk management framework to ensure business and system requirements with State and Federal security requirements. The contractor shall demonstrate in their proposal the framework, its processes, how the contractor will implement and manage it as well as how it will integrate with state business, organizational and technology goals and objectives. The contractor shall integrate this with their proposed approach to project governance and management.									
NFR-SP-005	Security	Regulatory Compliance	-	The Solution shall implement a security architecture based on current Medicaid Information Technology Architecture (MITA) Security and Privacy model and other applicable architecture documents.									
NFR-SP-006	Security	Regulatory Compliance	-	The contractor shall utilize the guidance provided in MARS-E 2.0 and shall be responsible for ensuring that the Solution meets all Industry, State, and Federal Security standards. At a minimum, the contractor shall ensure the Security of the Solution follows the following Federal regulations and publications: i. 45 CFR Part 95.621(f) ADP System Security Requirements and Review Process ii. Standards defined in Federal Information Processing Standards (FIPS) issued by the National Institute of Standards and Technology (NIST) iii. National Institute of Standards and Technology (NIST) Special Publication 800-111 Storage Encryption Technologies for End User Devices iv. NIST 800 Series v. NIST Cryptographic Module Validation List (http://csrc.nist.gov/groups/STM/cmvp/validation.html) vi. FIPS PUB 112 Password Usage Procedure vii. FIPS PUB 186-3 Digital Signature Standard June 2009 viii. Records Usage, Duplication, Retention, Re-disclosure and Timely Destruction Procedures/Restrictions 5 U.S.C. 552a (o)(1)(F), (H) and (I) ix. IRS Pub 1075 x. Federal Records Retention Schedule 44 U.S.C. 3303a xi. Privacy Act of 1974 at 5 U.S.C. 552a xii. Computer Matching and Privacy Protection Act of 1988 (CMPPA) xiii. Federal Information Security Management (FISMA) xiv. SSA Information System Security Guidelines for Federal, State, and Local Agencies xv. Child Online Privacy Protection Act xvi. Title XIX Confidentiality Rules xvii. HIPAA xviii. Title XXI xix. Federal security and privacy standards adopted by the U.S. Department of Health and Human Services for Exchanges									
NFR-SP-007	Security	Security Controls	-	The Solution services and infrastructure shall use open security standards and frameworks such as but not limited to: i. Policy: WS-Policy, WS-Trust, WS-Privacy, Security Assertion Markup Language (SAML), Enterprise Privacy Authorization Language (EPAL) ii. Federation: WS-Secure Conversation, WS-Federation, WS-Authorization, XML Key Management (XKMS) iii. Mechanism: Extensible Access Control Markup Language (XACML), XML Encryption, XML-Digital Signatures, Extensible rights Markup Language (XrML), X.509 certificates									

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NFR-SP-008	Security	Directory Service	-	The Solution shall use an Identity and Access Management (IDAM) solution for user authentication and authorization as well as the secure management of credentials. The IDAM solution shall be in compliance with relevant security controls defined in MARS-E standard. While the contractor may propose an IDAM solution, the Oracle Identity Access Management Suite has been selected by HCFA as its long-term IDAM solution. HCFA encourages the contractor to utilize this product in alignment with HCFA's strategic direction.									
NFR-SP-009			-	In the event the SI's Solution is strongly tied to a particular Identity and Access Management (IDAM) product, HCFA will give serious consideration to approving the use of that product. However, Oracle's Identity Access Management Suite has been selected and by HCFA as its long-term IDAM solution and HCFA strongly encourages the contractor to utilize this product in alignment with HCFA's strategic direction.									
NFR-SP-010	Security	Identity and Access Management (IdAM)	-	The Solution shall allow administrators to reset internal user's passwords.									
NFR-SP-011	Security	Identity and Access Management (IdAM)	-	The contractor shall design and enable workflows for managing internal user accounts including but not limited to requests, approvals, role assignments etc.									
NFR-SP-012	Security	Identity and Access Management (IdAM)	-	The Solution shall utilize dynamic Knowledge Based Authentication (KBA) to be used during a consumer's account setup process. This identity process shall ask a minimum of three (3) "out of wallet" questions to perform a KBA process. If one question is answered incorrectly the solution shall ask two (2) supplemental questions. If more than one question is answered incorrectly then the email address and SSN shall be "quarantined" (i.e., no one can apply using these details) and the applicant shall enter a person-to-person process to free the application from quarantine and setup their account. The Dynamic KBAs shall use external services to verify the individual KBA responses. Many Medicaid clients may have little financial history and so a service that does not rely purely on credit is preferred or a service that can leverage other government data sources (e.g. Federal Data Services Hub (FDSH) Remote Identity Proofing (RIDP) service).									
NFR-SP-013	Security	Security Controls	-	The Solution shall display an informational message with contact information on whom to contact when access is denied.									
NFR-SP-014	Security	Security Event and Incident Management (SEIM)	-	The contractor shall 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 HCFA.									
NFR-SP-015	Security	Regulatory Compliance	-	The contractor shall provide certifications of the completion for audit review of security and privacy related training for project staff as well as signed acknowledgements of security and privacy obligations as requested by HCFA.									
NFR-SP-016	Security	Identity and Access Management (IdAM)	-	The Solution shall provide accessibility to the worker portal via a single sign-on adhering to standards of security technologies such as but not limited to SAML.									
NFR-SP-017	Security	Physical Security	-	The contractor shall develop and provide HCFA a Security Management Plan (SMP) that addresses the contractor physical security processes.									
NFR-SP-018	Security	Physical Security	-	The contractor shall protect all contractor facilities against intrusion during non-working hours with an appropriate surveillance alarm/system extended to a manned monitoring center.									
NFR-SP-019	Security	Security Event and Incident Management (SEIM)	-	The contractor shall produce a Data Classification Document that defines the data elements related to the security and privacy controls in the Solution. The Data Classification Document is a key factor in determining the artifact requirements applicable for the project and detailed in the PPA. The Data Classification Document shall track and monitor changes from input and output sources. **reconcile with data architecture requirement**									
NFR-SP-020	Security	Security Event and Incident Management (SEIM)	-	The Solution shall integrate with HCFA's SIEM solution (currently IBM QRadar).									
NFR-SP-021	Security	Security Event and Incident Management (SEIM)	-	The contractor shall be responsible for integrating and providing configuration for database audit solution									

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NFR-SP-022	Security		-	The contractor shall not use copies of production data in non-production environments. Synthetic test data (totally secure, realistic, meaningful sets of data) shall be used in non-production activities.									
NFR-SP-023	Security	Data Protection and Privacy	-	The contractor shall be responsible for identifying and notifying HCFA security of any sensitive data being stored processed, viewed or otherwise used by its staff that would concern HCFA security and privacy.									
NFR-SP-024	Security	Regulatory Compliance	-	The contractor shall ensure all appropriate measures are in place for minimal use and protection per applicable regulations for the data types and classifications. Policies, procedure and related controls around the use of sensitive data may be required and reasonable made available for review by HCFA security or audit staff.									

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					Out of the Box	Configuration	Custom Design and Development	Does not meet				REQ Met? (Y / N / P)	Reviewer Comment
NFR-OCM-001	Organizational Change Management (OCM)	OCM	General	The contractor shall include, consult, and work directly with assigned project Organizational Change Management & Training (OCMT) personnel for any and all process, systems, and/or operating model planning, analysis, and/or design efforts, workshops, and/or other meetings									
NFR-OCM-002	Organizational Change Management (OCM)	OCM	General	The contractor shall work directly with assigned project Organizational Change Management & Training (OCMT) Team Members for any identified OCM, Stakeholder, or Communication needs, as required by the State to ensure adherence with State-approved OCMT methodology									
NFR-OCM-003	Organizational Change Management (OCM)	OCM	Resources and Support	The contractor shall assist the OCMT Team in assessing the change magnitude for the project in question to initially define and/or refine OCMT scope and overall approach as inputs for the development of any stakeholder engagement plans									
NFR-OCM-004	Organizational Change Management (OCM)	OCM	General	The contractor shall provide the project plan and validate major milestones and timing to ensure alignment with Stakeholder and/or OCMT activities across the project lifecycle									
NFR-OCM-005	Organizational Change Management (OCM)	OCM	Resources and Support	The contractor shall work with the OCMT Team to identify appropriate stakeholders and messaging for project-related communication and stakeholder engagement needs									
NFR-OCM-006	Organizational Change Management (OCM)	OCM	Stakeholder Management	The contractor shall adhere to the OCMT MMP Stakeholder Management Plan(s) and follow relationship/interaction mapping requirements when identifying and/or engaging stakeholders for the purpose of data and information collection									
NFR-OCM-007	Organizational Change Management (OCM)	OCM	Stakeholder Management	The contractor shall coordinate and communicate stakeholder engagement needs and results to the designated OCMT Stakeholder Register manager									
NFR-OCM-008	Organizational Change Management (OCM)	OCM	Communications	The contractor shall coordinate with the project manager in compliance with communication plan(s) on all identified communication needs to ensure any communication needs are in alignment with, and/or added to, approved project-specific communication plan(s) as defined by the project team									
NFR-OCM-009	Organizational Change Management (OCM)	OCM	Documentation	The contractor shall provide access to key documentation and subject matter experts in any quantity and quality as the State might deem reasonable to support assessing organizational impact and other OCMT Plan activities as needed									
NFR-OCM-010	Organizational Change Management (OCM)	OCM	Resources and Support	The contractor shall provide resources sufficient in any quantity and capability as deemed reasonable by the State to support the following OCMT Plan activities, including but not limited to: 1. All the activities defined to support the various phases of the State-approved approach as defined in the OCMT Plan (i.e., Analysis, Design, Development, Implementation, and Evaluate) and/or State-approved Stakeholder Analysis and Management Plan. (See the Organizational Change Management & Training Plan framework for more information on the State-approved OCMT Approach) 2. Proactively identifying or assisting in the identifying of areas of impact and the potential resolution to areas of impact as they pertain to organizational design requirements and applicable stakeholder engagement plans 3. Providing input into the Change Magnitude Assessment tool 4. Supporting the identification of key stakeholders 5. Validating identified change impacts (both system and process related) 6. Providing subject matter experts in specific work areas, processes, applications, etc. to support awareness building sessions and/or other stakeholder engagement activities									
NFR-OCM-011	Organizational Change Management (OCM)	Training	Documentation	The contractor shall provide process flows (end-to-end processes), including application process steps and systems documentation (including screen shots) to OCMT Training team that can be utilized as the foundation to build MMP related trainings									

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NFR-OCM-012	Organizational Change Management (OCM)	Training	General	The contractor shall provide resources sufficient in any quantity and capability as deemed reasonable by the State to support the following training activities, including but not limited to: 1. All those activities defined to support the various phases of the Training Approach (Analysis, Design, Development, Implementation, and Evaluate) that are included in subsequent sections of this document (See the Organizational Change Management & Training Plan framework for more information on the State-approved Training Approach) 2. Defining user roles 3. Supporting the identification of appropriate curriculum and delivery models 4. Participating and providing information during Training Development Knowledge Share Sessions 5. Validating and approving training materials related to the technical solution 6. Building and maintaining the training environments 7. Creation of user profiles and log-in credentials in quantity as requested by the State to allow trainers and end users appropriate access to the training environments 8. Providing subject matter experts in specific work areas, processes, applications, etc. to support classroom learning and Train-the-Trainer programs (supplying at least 1 SME in each discreet classroom training event) 9. Providing a plan and active support of Post Go-Live training events that encompass prior training support activities delivered or supported by the contractor for a period of time as deemed reasonable by the State									
NFR-OCM-013	Organizational Change Management (OCM)	Training	Resources and Support	The contractor will support the Training Analysis phase (or process) by providing and collaborating with the Training team on an ongoing basis in the following ways, including but not limited to: 1. Providing insight into role definition and assignments required to operate and/or support future-state applications and processes 2. Providing insight into standard training curriculum requirements required to support future-state applications and processes 3. Providing insights into the training delivery framework required to support future-state applications and processes 4. Actively collaborating with training team to determine best of breed training approaches for the State end user population									
NFR-OCM-014	Organizational Change Management (OCM)	Training	Environments	The contractor shall build and maintain 2 fully functional training environments representative of the final-state operational system (e.g., final user interface/GUI) that are dedicated to supporting training activities. The 2 separate environments must clearly and accurately reflect upcoming software versions and closely align with the software release schedule. The environments will be used for the purpose of: · Training Development · Training Delivery									
NFR-OCM-015	Organizational Change Management (OCM)	Training	Environments	Training Development and Training Delivery environments should include the following, at a minimum & not limited to: 1. Transactional data (masked according to the security and/or confidentiality guidelines provided by the State) 2. Training Development Environment to stage scenarios, get screen shots, etc., to support the defined training schedule 3. Identification and provision of training environment data in order to provide for scenario based training 4. Specific trainer profiles & credentials that provide fully functional capabilities within both the development and delivery environments 5. Sufficient user profiles respective of future state roles within HCFA to perform and execute any and all potential concurrent classes as defined by the training schedule and/or the State 6. Associated log in credentials to support user profiles 7. Training Environment must be established and access granted to the OCMT Team no fewer than seven (7) months prior to "go-live" such that the development of all requisite training materials may begin in earnest									

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NFR-OCM-016	Organizational Change Management (OCM)	Training	Resources and Support	<p>The contractor will support the Training Design and Development phases (or process) by providing and collaborating with the Training team on an ongoing basis in the following ways, including but not limited to:</p> <ol style="list-style-type: none"> Aligning project plan(s) and validating major milestones to support training timelines Providing existing and historical baseline training materials (in digital or print format as required by the State) such as but not limited to training manuals, quick reference guides, PowerPoints, simulations, etc. Actively participate and provide information during Training Development Knowledge Share Sessions Training and supporting the OCMT Training personnel on any an all system specific work areas, processes, applications, etc. as deemed appropriate by the State for the purposes of executing a system-based scenario training program to all impacted State personnel Providing, as requested, validation of future-state process information and documentation Providing or cooperating in the identification of realistic, representative business scenarios to be used for training development and delivery purposes as defined by the State Providing access to the training development environment at the outset of the Training Development Phase Coordinate and support the development and maintenance of hardware requirements (for example, but not limited to, classroom computers or laptops, independent servers that might be required to house training development tools and associated content, etc.) with the State for training delivery purposes Adhering to the KPMG TN TAS and/or OCMT QM process as they have been approved by the State 									
NFR-OCM-017	Organizational Change Management (OCM)	Training	Resources and Support	<p>The contractor will support the Training Implementation phase (or process) by providing and collaborating with the Training team on an ongoing basis in the following ways, including but not limited to:</p> <ol style="list-style-type: none"> Delivering (or supporting the delivery of) and actively participating in training and/or classroom sessions and activities as needed and defined by the State in order to provide subject matter expertise in specific work areas, processes, applications, etc. (supplying at least 1 SME in each discreet classroom training event) Providing feedback on training program for continuous improvement efforts Providing necessary support for the appropriate maintenance of the training environment (e.g., making updates to scenarios or transactional data to support continuous improvement) Providing necessary resources to execute and maintain an active training environment refresh schedule based on scheduled training events to support any and all potential concurrent classes as defined by the training schedule Actively participate in any and all necessary hardware and other training infrastructure support activities to ensure smooth and consistent training delivery Training Delivery to begin no fewer than two (2) months prior to "go-live" and remain open for no fewer than one (1) month after "go-live," as required by the State 									
NFR-OCM-018	Organizational Change Management (OCM)	Training	Resources and Support	<p>The contractor will support the Training Evaluation phase (or process) by providing and collaborating with the Training team in the following ways, including but not limited to:</p> <ol style="list-style-type: none"> Developing a Knowledge Transition Plan that encompasses prior training support activities delivered or supported by the SI Providing a plan and active support of Post Go-Live training events that encompasses prior training support activities delivered or supported by the contractor for a period of time as deemed reasonable by the State 									
NFR-OCM-019	Organizational Change Management (OCM)	Training	Resources and Support	The contractor shall support any and all other training activities to ensure an effective, positive learning experience as required by the State.									
NFR-OCM-020	Organizational Change Management (OCM)	Training	Resources and Support	The contractor shall provide a full-time, dedicated OCMT counterpart with appropriate OCMT background, to be approved by the State, whose responsibilities will include, at a minimum, the effective and timely execution of any and all OCMT activities throughout the duration of all relevant Program project lifecycles									

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NFR-OM-001	Operations and Maintenance	Continuous Improvement Process	Define Areas of Improvement	The contractor shall perform formal maturity assessments and service reviews against each capability. Assessments shall be conducted at least once a quarter, in order to highlight areas of improvement or concern. The findings of the maturity assessments and the service reviews shall be published to HCFA. The effectiveness of the CIP shall be demonstrated through these assessments over time, and shall be presented to HCFA in an annual review.									
NFR-OM-002	Operations and Maintenance	Continuous Improvement Process	Define Areas of Improvement	The contractor shall be pro-active in its approach, developing quarterly and annual improvement roadmaps detailing initiatives on a three year cycle and set target maturity levels to measure success of the CIP.									
NFR-OM-003	Operations and Maintenance	Continuous Improvement Process	Gather and Process the Data	The contractor shall be responsible for gathering and rationalizing the supporting data for each defined KPI, and making it consistent to identify any potential gaps in the data.									
NFR-OM-004	Operations and Maintenance	Continuous Improvement Process	Gather and Process the Data	The contractor shall develop reports and dashboards to support the CIP and make them available to HCFA on a monthly basis. Reports and dashboards and the underlying KPIs will be continuously reviewed and modified in order to mature the CIP and produce the best results.									
NFR-OM-005	Operations and Maintenance	Continuous Improvement Process	Analyze Data	The contractor shall perform data analysis for all relevant services as defined within the CIP. Data analysis shall be performed at least once per quarter.									
NFR-OM-006	Operations and Maintenance	Continuous Improvement Process	Analyze Data	The contractor shall produce data analysis report and shall publish the report to the various HCFA stakeholders. The data analysis report shall present accurate picture of the results of each service performance against the defined KPIs (referenced at each capability section), allowing HCFA's stakeholders maximum visibility to enhance effective managerial decision making.									
NFR-OM-007	Operations and Maintenance	Continuous Improvement Process	Implement Corrective Action Plans	The contractor shall develop Corrective Action Plans (CAP) for each of the issues identified. The CAP must be published to HCFA for approval. All CAP plans must consider cross functional dependencies.									
NFR-OM-008	Operations and Maintenance	Continuous Improvement Process	Implement Corrective Action Plans	The contractor shall develop and manage a procedure for tracking and validating the implementation of the CAP.									
NFR-OM-009	Operations and Maintenance	Continuous Improvement Process	Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: <ul style="list-style-type: none"> - % of success of regular audits of the ITSC plans to ensure that, at all times, the agreed recovery requirements of the business can be achieved - % overall risk and impact of possible failure of IT services - % of business processes which are covered by explicit service continuity targets - Disaster preparedness gaps - Duration from the identification of a disaster-related risk to the implementation of a suitable continuity mechanism - Number of disaster practices carried out - Number of identified deficiencies during disaster tests, practices, and exercises - Number of errors found in an audit of the information in lists of key people, their responsibilities and contact details 									
NFR-OM-010	Operations and Maintenance	Service Level Management	Define Service Level Requirements	The contractor shall assist HCFA in defining new SLAs for services which were not defined within the original RFQ, or revising defined SLAs to the appropriate level to meet service requirements.									
NFR-OM-011	Operations and Maintenance	Service Level Management	Create SLAs/ OLAs/ Contracts	The contractor shall be responsible for agreeing to / negotiating service level agreements and developing and/or revising service levels for future service.									
NFR-OM-012	Operations and Maintenance	Service Level Management	Create SLAs/ OLAs/ Contracts	The contractor shall formally agree to all Service Levels defined within the TEDS RFQ, in the event that the contractor does not agree, HCFA and the contractor shall negotiate the SLA to a mutual agreement.									
NFR-OM-013	Operations and Maintenance	Service Level Management	Monitor and Report on Service Levels	The contractor shall produce and manage a formal process for ongoing review and revision of the service levels between the State, contractor and TAS. The process shall be submitted to HCFA for approval.									
NFR-OM-014	Operations and Maintenance	Service Level Management	Monitor and Report on Service Levels	The contractor shall monitor performance against SLAs approved by HCFA. Reporting and monitoring of SLAs must be accurate and provide data that provides HCFA a complete view of the performance for each service. Reports must be published to HCFA.									
NFR-OM-015	Operations and Maintenance	Service Level Management	Perform Service Level Reviews	The contractor shall perform periodic reviews, on a cadence defined by HCFA, of SLAs and performance against them to ensure HCFA is satisfied with the level of performance. The contractor must produce and publish to HCFA formal reports of the periodic review findings.									
NFR-OM-016	Operations and Maintenance	Service Level Management	Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: <ul style="list-style-type: none"> - # and severity of SLA breaches - Percentage in SLA targets threatened - Percentage in SLA breaches caused because of third-parties - Percentage in SLA breaches caused because of internal OLAs 									

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NFR-OM-017	Operations and Maintenance	Service Portfolio and Service Catalog Management	Service Portfolio and Service Catalogue Compliance and Alignment	If and when HCFA develops a Service Portfolio and Service Catalogue capability, the contractor shall provide the relevant input to HCFA and other third party service providers on an as-needed basis.									
NFR-OM-018	Operations and Maintenance	Service Portfolio and Service Catalog Management	Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: - Current capacity consumption against plan - Projected capacity needs moving forward - # of capacity related alerts received by service desk - # of capacity related incidents identified and resolved before any production impact - # of applications supported - # of CI's under-utilized divided by total number of CI's supported - % of SLA breaches due to either poor service performance or poor component performance - Variance of actual vs. forecasted spend for each solution, with observations and justification regarding the variance - # of capacity related adjustments due to demand - % of components that are under capacity monitoring									
NFR-OM-019	Operations and Maintenance	Technology Capacity and Performance Management	Monitor, Analyze, Tune & Implement	The contractor shall draft requirements for planning, managing, and reporting System Capacity in coordination with HCFA Business and IS leadership.									
NFR-OM-020	Operations and Maintenance	Technology Capacity and Performance Management	Monitor, Analyze, Tune & Implement	The contractor shall develop a System Capacity Plan which details the requirements for planning, managing, and reporting System Capacity.									
NFR-OM-021	Operations and Maintenance	Technology Capacity and Performance Management	Monitor, Analyze, Tune & Implement	The contractor shall determine the performance drivers for performance management and their impacts on systems developed.									
NFR-OM-022	Operations and Maintenance	Technology Capacity and Performance Management	Monitor, Analyze, Tune & Implement	The contractor shall agree with HCFA upon minimum levels of capacity the system must provide, based on consumer demand.									
NFR-OM-023	Operations and Maintenance	Technology Capacity and Performance Management	Monitor, Analyze, Tune & Implement	The contractor shall agree with HCFA on a maximum response time, maximum processing time for each request, and minimum number of requests that can be processed in a given period of time.									
NFR-OM-024	Operations and Maintenance	Technology Capacity and Performance Management	Monitor, Analyze, Tune & Implement	The contractor shall draft capacity expectations for each system component.									
NFR-OM-025	Operations and Maintenance	Technology Capacity and Performance Management	Monitor, Analyze, Tune & Implement	The contractor shall monitor application and infrastructure performance 24/7/365 and perform ongoing load balancing and proactive management of systems to ensure sufficient capacity and application availability.									
NFR-OM-026	Operations and Maintenance	Technology Capacity and Performance Management	Monitor, Analyze, Tune & Implement	The contractor shall leverage leading tools for the monitoring, analysis and tuning of capacity and performance, which may include new or emerging technologies. Tools and technologies shall be properly vetted and approved by HCFA.									
NFR-OM-027	Operations and Maintenance	Technology Capacity and Performance Management	Manage Demand	The contractor shall forecast future capacity needs based on industry leading practices to project future demand while enhancing technologies to meet demand.									
NFR-OM-028	Operations and Maintenance	Technology Capacity and Performance Management	Manage Demand	The contractor shall ensure technologies are adequately configured to meet the forecasted peak demands and establish thresholds which will trigger appropriate corrective action.									
NFR-OM-029	Operations and Maintenance	Technology Capacity and Performance Management	Manage Demand	The contractor shall map applications and infrastructure to business processes and related demand, to measure capacity requests and consumption.									
NFR-OM-030	Operations and Maintenance	Technology Capacity and Performance Management	Manage Demand	The contractor shall include cost benefit analysis as a component of the solution recommendation to HCFA IS.									

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NFR-OM-031	Operations and Maintenance	Technology Capacity and Performance Management	Manage Demand	The contractor shall record and track utilization of system resources to determine where capacity adjustments need to be made to support business processes as defined by HCFA. This shall be continually evaluated to ensure any system or environmental changes have not impacted capacity and performance.									
NFR-OM-032	Operations and Maintenance	Technology Capacity and Performance Management	Model & Trend	The contractor shall develop demand estimates for the TEDS solution in coordination with HCFA Business and IS leadership and adjust/report on estimates in accordance with the CIP reporting schedule.									
NFR-OM-033	Operations and Maintenance	Technology Capacity and Performance Management	Model & Trend	The contractor shall develop a model for capacity demand based on available HCFA data in coordination with HCFA Business and IS leadership.									
NFR-OM-034	Operations and Maintenance	Technology Capacity and Performance Management	Model & Trend	The contractor shall test capacity demand prototype models to ensure they surpass demand estimates.									
NFR-OM-035	Operations and Maintenance	Technology Capacity and Performance Management	Model & Trend	The contractor shall continuously update reusable sizing and estimating models to aid in capacity forecasting that utilize performance characteristics of applications based on historical data, projected load, locations, and other factors the contractor deems appropriate.									
NFR-OM-036	Operations and Maintenance	Technology Capacity and Performance Management	Perform Application Sizing	The contractor shall estimate the required number of resources needed to support change in existing service levels and newly identified services in coordination with HCFA Business and IS leadership.									
NFR-OM-037	Operations and Maintenance	Technology Capacity and Performance Management	Plan & Optimize	The contractor shall develop a System Capacity Plan that documents the current levels of resource utilization and service performance, and forecasts the future requirements for new TEDS resources									
NFR-OM-038	Operations and Maintenance	Technology Capacity and Performance Management	Plan & Optimize	The contractor shall consult with HCFA on the service strategy plans for the TEDS solution.									
NFR-OM-039	Operations and Maintenance	Technology Capacity and Performance Management	Plan & Optimize	The contractor shall forecast future requirements for new resources in coordination with HCFA IS leadership to support IT services that underpin the business activities.									
NFR-OM-040	Operations and Maintenance	Technology Capacity and Performance Management	Plan & Optimize	The contractor shall provide recommendations on resources required, costs, benefits, impacts, and other areas the contractor or HCFA deem appropriate.									
NFR-OM-041	Operations and Maintenance	Technology Capacity and Performance Management	Plan & Optimize	The contractor shall provide a non-disruptive implementation plan for the recommended solution and follow the HCFA IS protocol for solution implementation and change control.									
NFR-OM-042	Operations and Maintenance	Technology Capacity and Performance Management	Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: <ul style="list-style-type: none"> - Current capacity consumption against plan - Projected capacity needs moving forward - # of capacity related alerts received by service desk - # of capacity related incidents identified and resolved before any production impact - # of applications supported - # of CI's under-utilized divided by total number of CI's supported - % of SLA breaches due to either poor service performance or poor component performance - Variance of actual vs. forecasted spend for each solution, with observations and justification regarding the variance - # of capacity related adjustments due to demand - % of components that are under capacity monitoring 									
NFR-OM-043	Operations and Maintenance	Availability Management	Plan & Design for Availability	The contractor shall draft requirements for system availability in coordination with HCFA Business and IS leadership.									
NFR-OM-044	Operations and Maintenance	Availability Management	Plan & Design for Availability	The contractor shall develop a Program System Performance and Availability Management Plan that outlines performance and availability creation and management processes.									
NFR-OM-045	Operations and Maintenance	Availability Management	Plan & Design for Availability	The contractor shall coordinate with HCFA and third party providers to determine targets for availability, reliability, and maintainability for IT infrastructure components.									
NFR-OM-046	Operations and Maintenance	Availability Management	Plan & Design for Availability	The contractor shall agree with HCFA upon minimum target levels for availability, reliability, and maintainability of IT infrastructure components.									

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					Out of the Box	Configuration	Custom Design and Development	Does not meet					
NFR-OM-047	Operations and Maintenance	Availability Management	Perform Risk Assessment	The contractor shall perform regular availability risk assessments to identify and quantify risks and countermeasures to protect the availability of IT systems.									
NFR-OM-048	Operations and Maintenance	Availability Management	Implement Countermeasures	The contractor shall develop appropriate controls and countermeasures to improve the availability and resilience of TEDS services and underlying IT components.									
NFR-OM-049	Operations and Maintenance	Availability Management	Test Availability & Resilience Mechanisms	The contractor shall perform periodic availability mechanism tests to ensure that availability and resiliency mechanisms designed to provision services are operating effectively.									
NFR-OM-050	Operations and Maintenance	Availability Management	Test Availability & Resilience Mechanisms	The contractor shall inform the HCFA Control Owner and the Internal Audit function of audit findings observed during periodic audits.									
NFR-OM-051	Operations and Maintenance	Availability Management	Test Availability & Resilience Mechanisms	The contractor shall publish Availability & Resilience test results report and ensure that they are available to HCFA Business and IS leadership.									
NFR-OM-052	Operations and Maintenance	Availability Management	Monitor, Measure, Analyze, & Report Availability	The contractor shall leverage existing HCFA tools where available									
NFR-OM-053	Operations and Maintenance	Availability Management	Monitor, Measure, Analyze, & Report Availability	The contractor shall develop availability reports to document and maintain all availability and performance analysis results conducted on the system.									
NFR-OM-054	Operations and Maintenance	Availability Management	Monitor, Measure, Analyze, & Report Availability	The contractor shall provide availability reports to HCFA for review during periodic service level review meetings.									
NFR-OM-055	Operations and Maintenance	Availability Management	Monitor, Measure, Analyze, & Report Availability	The contractor shall conduct ongoing availability and performance analysis on the system which includes monitoring the availability 24/7/365.									
NFR-OM-056	Operations and Maintenance	Availability Management	Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: <ul style="list-style-type: none"> - % availability of the overall TEDS solution - % availability of specific TEDS services - % availability of TEDS individual systems - % reduction in the unavailability of services and components - % increase in the reliability of services and components - % improvement in overall end-to-end availability of service - % reduction in the number and impact of service breaks 									
NFR-OM-057	Operations and Maintenance	IT Service Continuity	Initiate ITSC	The contractor shall draft requirements for IT Service Continuity in coordination with HCFA Business and IS leadership.									
NFR-OM-058	Operations and Maintenance	IT Service Continuity	Initiate ITSC	The contractor shall develop an Integrated Business Continuity/Disaster Recovery Plan (BC/DR), consistent with NIST 800-34 Rev 1 and CMS control standards including MARS-E 2.0 Contingency Planning control family that outline BC/DR capabilities.									
NFR-OM-059	Operations and Maintenance	IT Service Continuity	Initiate ITSC	The contractor shall develop BC/DR policies and procedures in coordination with HCFA leadership.									
NFR-OM-060	Operations and Maintenance	IT Service Continuity	Initiate ITSC	The contractor shall draft BC/DR guidelines in compliances with State policies and expectations									
NFR-OM-061	Operations and Maintenance	IT Service Continuity	Initiate ITSC	The contractor shall draft a Backup implementation plan that involves vm and volume snapshots.									
NFR-OM-062	Operations and Maintenance	IT Service Continuity	Initiate ITSC	The contractor shall develop multiple backup approach strategy. Backups by using backup software. Backups from storage systems using snapshot technologies.									
NFR-OM-063	Operations and Maintenance	IT Service Continuity	Initiate ITSC	The contractor shall have a designated BC/DR representative.									
NFR-OM-064	Operations and Maintenance	IT Service Continuity	Initiate ITSC	The contractor will build and maintain a Standard Operating Procedure Manual (SOP) The manual will be indexed, with separate chapters (sections) for each area of O&M) and kept available to State staff. The State may require an SOP be written for specific system support functions. *** This would be customized for each section to identify the chapter in an SOP manual.									
NFR-OM-065	Operations and Maintenance	IT Service Continuity	Initiate ITSC	The contractor will develop, maintain, and implement complete version for control processes and procedures. The contractor will provide any / all tools necessary to fulfill the obligations of this contract.									
NFR-OM-066	Operations and Maintenance	IT Service Continuity	Define ITSC Requirements & Strategy	The contractor shall perform a Business Impact Analysis (BIA) to quantify the impact of a loss of service to HCFA.									
NFR-OM-067	Operations and Maintenance	IT Service Continuity	Define ITSC Requirements & Strategy	The contractor shall perform Risk Assessments in to determine areas that can be mitigated by IT and to define levels of acceptable risks to the organization.									
NFR-OM-068	Operations and Maintenance	IT Service Continuity	Define ITSC Requirements & Strategy	The contractor shall develop ITSC strategies in coordination with HCFA leadership to achieve optimum balance of risk reduction and disaster recovery and continuity options based on the results of BIAs and Risk Assessments.									

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NFR-OM-069	Operations and Maintenance	IT Service Continuity	Define ITSC Requirements & Strategy	The contractor shall maintain an inventory of critical system applications and processes.									
NFR-OM-070	Operations and Maintenance	IT Service Continuity	Implement ITSC	The contractor shall ensure that all required services, facilities and resources are delivered in an acceptable operational state and are 'fit for purpose' when accepted by the business.									
NFR-OM-071	Operations and Maintenance	IT Service Continuity	Implement ITSC	The contractor shall perform service continuity procedures as defined in the BC/DR plan in the event of a disaster.									
NFR-OM-072	Operations and Maintenance	IT Service Continuity	Implement ITSC	The contractor shall participate in enterprise BC/DR testing initiated by HCFA.									
NFR-OM-073	Operations and Maintenance	IT Service Continuity	Perform ITSC On-Going Operations	The contractor shall ensure that all vendor staff are aware of the implication of business continuity and of service continuity and consider these as part of their normal working activities.									
NFR-OM-074	Operations and Maintenance	IT Service Continuity	Perform ITSC On-Going Operations	The contractor shall train all HCFA, State and vendor personnel involved in BC/DR procedures.									
NFR-OM-075	Operations and Maintenance	IT Service Continuity	Perform ITSC On-Going Operations	The contractor shall develop and establish a program of regular testing to ensure critical components of the ITSC strategy can be recovered within the desired Recovery Time Objective									
NFR-OM-076	Operations and Maintenance	IT Service Continuity	Perform ITSC On-Going Operations	The contractor shall ensure that all changes are assessed for potential impact on ITSC plans.									
NFR-OM-077	Operations and Maintenance	IT Service Continuity	Perform ITSC On-Going Operations	The contractor shall develop Vendor Service Continuity and Disaster reports to document and maintain BC/DR test results on a quarterly basis.									
NFR-OM-078	Operations and Maintenance	IT Service Continuity	Perform ITSC On-Going Operations	The contractor shall provide Vendor Service Continuity and Disaster reports to HCFA for review during periodic service level review meetings.									
NFR-OM-079	Operations and Maintenance	IT Service Continuity	Perform ITSC On-Going Operations	The contractor shall develop a backup job and server audit.									
NFR-OM-080	Operations and Maintenance	IT Service Continuity	Perform ITSC On-Going Operations	The contractor shall develop and implement a testing program to include bi-annual table-top tests, quarterly selected critical component testing, and yearly technical cut over tests.									
NFR-OM-081	Operations and Maintenance	IT Service Continuity	Invoke ITSC	The contractor shall perform all ITSC activities as declared by HCFA.									
NFR-OM-082	Operations and Maintenance	IT Service Continuity	Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: <ul style="list-style-type: none"> - % of success of regular audits of the ITSC plans to ensure that, at all times, the agreed recovery requirements of the business can be achieved - % overall risk and impact of possible failure of IT services - % of business processes which are covered by explicit service continuity targets - Disaster preparedness gaps - Duration from the identification of a disaster-related risk to the implementation of a suitable continuity mechanism - Number of disaster practices carried out - Number of identified deficiencies during disaster tests, practices, and exercises - Number of errors found in an audit of the information in lists of key people, their responsibilities and contact details 									
NFR-OM-083	Operations and Maintenance	Service Transition Planning and Support	Define Service Transition Strategy & Approach	The contractor shall create a formalized service description and associated details when responding to business needs or proactively proposing new services									
NFR-OM-084	Operations and Maintenance	Service Transition Planning and Support	Define Service Transition Lifecycle Stages	The contractor shall complete Service Design Packages (SDP) for major new service implementations									
NFR-OM-085	Operations and Maintenance	Service Transition Planning and Support	Prepare for Service Transition	The contractor shall respond to any SDP formal checks throughout the SDLC									
NFR-OM-086	Operations and Maintenance	Service Transition Planning and Support	Prepare for Service Transition	During the service transition lifecycle, the contractor shall maintain consistent and effective communications with all impacted stakeholders									
NFR-OM-087	Operations and Maintenance	Service Transition Planning and Support	Plan & Coordinate Service Transition	The service shall provide a clearly defined promote-to-production process that enforces a strictly defined methodology for movement from development to quality assurance (QA) and production									
NFR-OM-088	Operations and Maintenance	Service Transition Planning and Support	Provide Service Transition Process Support	The service shall provide a clearly defined promote-to-production process that enforces a strictly defined methodology for movement from development to quality assurance (QA) and production									

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NFR-OM-089	Operations and Maintenance	Service Transition Planning and Support	Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: <ul style="list-style-type: none"> - % increase in the number of releases implemented that meet the customer's agreed requirements in terms of cost, quality, scope and release schedule (expressed as a percentage of all releases) - % reduction in variation of actual versus predicted scope, quality, cost and time - % reduction in number of issues, risks and delays - % increase of service transition success rates - % increase in project and service team satisfaction with the service transition practices - % reduction of number of issues caused by conflicting demands for shared resources 									
NFR-OM-090	Operations and Maintenance	IT Change Management	Initiate Change Request	The contractor shall produce and enforce formal procedures to initiate and log requests for change (RFCs). RFCs shall provide data to allow the state to assess the change, including reason/cause, impacts, cost, schedule, and priority									
NFR-OM-091	Operations and Maintenance	IT Change Management	Initiate Change Request	The contractor shall manage an automated Change Control Tool where changes will be logged and managed									
NFR-OM-092	Operations and Maintenance	IT Change Management	Initiate Change Request	The contractor shall complete a Security Impact Analysis (SIA) form and a narrative of all risks identified by the Change Request submitter with each Change Request									
NFR-OM-093	Operations and Maintenance	IT Change Management	Review, Assess and Authorize	The contractor shall clearly categorize changes and publish the categorization to HCFA for approval. Change types include normal changes, standard changes, and emergency changes									
NFR-OM-094	Operations and Maintenance	IT Change Management	Review, Assess and Authorize	The contractor shall submit a documented RFC for emergency changes within 24 hours of the change being made									
NFR-OM-095	Operations and Maintenance	IT Change Management	Review, Assess and Authorize	The contractor shall publish defined RFC naming and prioritization procedures, based on business priorities and impact determinations, to ensure HCFA clearly understands what the change is, its priority, and potential impacts									
NFR-OM-096	Operations and Maintenance	IT Change Management	Review, Assess and Authorize	The contractor shall produce and publish to HCFA policies to categorize an emergency change. These changes require the appropriate executive level approvals									
NFR-OM-097	Operations and Maintenance	IT Change Management	Review, Assess and Authorize	The contractor shall produce and abide by the results of an automated risk calculation that will recommend if the change should be approved or denied. This calculation will be based on system risk multiplied by the magnitude of the impact									
NFR-OM-098	Operations and Maintenance	IT Change Management	Review, Assess and Authorize	The contractor shall provide appropriate prioritization that is aligned with the business needs / requirements									
NFR-OM-099	Operations and Maintenance	IT Change Management	Plan & Schedule	The contractor shall produce a forward looking change schedule which accounts for all dependencies that can affect the timing of a change (e.g. year-end close activities, HCFA regulatory requirements etc.). This schedule will also articulate downstream impacts to the overall project schedule and identify any risks and potential contingency plans and workarounds as appropriate									
NFR-OM-100	Operations and Maintenance	IT Change Management	Plan & Schedule	The contractor shall manage the RFC schedule with defined and published lead times, based on risk and impact. All change windows must be agreed upon by HCFA. RFC schedules will follow the same SDLC process in use for the project									
NFR-OM-101	Operations and Maintenance	IT Change Management	Build & Test	The contractor shall provide test certification and other development/testing documents required by the SDLC process and that the HCFA Change Control Board requests									
NFR-OM-102	Operations and Maintenance	IT Change Management	Build & Test	The testing procedures for each change shall follow the process and standards established within the Test Management Plan									
NFR-OM-103	Operations and Maintenance	IT Change Management	Approve for Implementation	The contractor shall perform changes according to the agreed-upon and validated HCFA change schedule									
NFR-OM-104	Operations and Maintenance	IT Change Management	Approve for Implementation	The contractor shall participate in the HCFA CCB meetings and provide subject matter experts as needed to answer questions prior to formal approval process									
NFR-OM-105	Operations and Maintenance	IT Change Management	Approve for Implementation	The contractor shall update change records within the Change Control Tool with the appropriate status changes and details about the change and communicate updates to HCFA stakeholders and partners									
NFR-OM-106	Operations and Maintenance	IT Change Management	Approve for Implementation	The contractor shall receive CCB approval for all changes prior to promotion into the Production environment									
NFR-OM-107	Operations and Maintenance	IT Change Management	Coordinate & Implement	The contractor shall produce and publish to HCFA ongoing formal documentation of the activities and checkpoints required to coordinate and implement authorized change(s)									
NFR-OM-108	Operations and Maintenance	IT Change Management	Coordinate & Implement	The contractor shall provide implementation team members to be on call and available following any implemented changes to production team									
NFR-OM-109	Operations and Maintenance	IT Change Management	Coordinate & Implement	The contractor vendor team should be able to back out any implemented changes that have a negative impact on the system									
NFR-OM-110	Operations and Maintenance	IT Change Management	Coordinate & Implement	The contractor shall communicate and coordinate with the HCFA configuration manager to ensure that all CI changes resulting from a new change is appropriately documented									
NFR-OM-111	Operations and Maintenance	IT Change Management	Review & Close	The contractor shall perform a formal post-implementation change review to confirm that the change has met objectives, and that HCFA's relevant change stakeholders are satisfied with the results. This review will be based on formal post-implementation change review process, which will be included in the SIs IT Change Management Plan, and approved by HCFA									

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NFR-OM-112	Operations and	IT Change Management	Review & Close	The contractor shall document and publish to HCFA lessons learned, to provide an opportunity to improve the IT Change Management process for future changes									
NFR-OM-113	Operations and Maintenance	IT Change Management	Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: <ul style="list-style-type: none"> - % of changes implemented successfully - Reduction in the backlog of change requests - % of Normal Changes - % of Expedited Changes - % of Standard Changes - % of Rejected Changes - % of Emergency Changes - % of successfully implemented approved changes. - Time to process change requests end-to-end by type - % of successful Back outs - % of changes which cause issues in the environment - % of implemented changes in which Post Implementation Review is performed - % of unauthorized changes 									
NFR-OM-114	Operations and	Configuration Management	Plan Configuration Management	The contractor shall develop a Configuration Management Plan which integrates with HCFAs Configuration Management Plan									
NFR-OM-115	Operations and Maintenance	Configuration Management	Plan Configuration Management	The contractor shall build and maintain a configuration management database (CMDB) which is maintained per the standards defined in the HCFA Configuration Management Plan. The CMDB shall be maintained within a service management tool which integrates the CMDB with other service management capabilities such as Incident Management and Change Management									
NFR-OM-116	Operations and	Configuration Management	Plan Configuration Management	The Vendor CMDB shall be accessible to HCFA stakeholders for increased transparency									
NFR-OM-117	Operations and	Configuration Management	Identify Configuration	Configuration Items shall be integrated to an enterprise CMDB									
NFR-OM-118	Operations and	Configuration Management	Identify Configuration	An initial set of Configuration Items (CI's) must be defined by the vendor in coordination with HCFA business and IS leadership to ensure appropriate level of granularity									
NFR-OM-119	Operations and	Configuration Management	Identify Configuration	The baseline configuration of the system shall be consistent with the TEDS enterprise architecture									
NFR-OM-120	Operations and	Configuration Management	Identify Configuration	Older versions of approved baseline configurations should be maintained and made available for review and rollback if needed									
NFR-OM-121	Operations and	Configuration Management	Control Configuration	The contractor configuration data model must be consistent with HCFAs enterprise CMDB configuration data model									
NFR-OM-122	Operations and	Configuration Management	Control Configuration	The contractor shall manage the lifecycle of each CI from identification through retirement									
NFR-OM-123	Operations and	Configuration Management	Monitor Configuration	The contractor shall develop standard reports in coordination with the HCFA configuration owner which provide views, at a minimum, to the definition of CI's, CI relationships, and status									
NFR-OM-124	Operations and	Configuration Management	Monitor Configuration	Updates to CIs must be published to HFCA configuration owners monthly, unless otherwise stated in the HCFA Configuration Management Plan									
NFR-OM-125	Operations and	Configuration Management	Verify Configuration	The contractor shall perform periodic audits of the CMDB to ensure accuracy and reliability of data as defined by HCFA configuration owner									
NFR-OM-126	Operations and	Configuration Management	Verify Configuration	Findings from CMDB audits shall be published in an audit report and shared with the HCFA configuration owner									
NFR-OM-127	Operations and	Configuration Management	Verify Configuration	Findings from the CMDB audits must be resolved within 30 days									
NFR-OM-128	Operations and Maintenance	Configuration Management	Capability Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: <ul style="list-style-type: none"> - % of backed out changes, due to inaccurate impact analysis - % of rolled back changes - % of changes that were completed successfully with correct data in CMS - The average time and cost of diagnosing and resolving incidents and problems (by type) - % of business impact of outages and incidents caused by poor asset and configuration management - # of total number of CIs tracked over time 									
NFR-OM-129	Operations and Maintenance	Release Deployment Management	Review & Validate Release	The contractor shall develop a Release and Deployment Management Plan which integrates with HCFAs Release and Deployment Management Plan									
NFR-OM-130	Operations and Maintenance	Release Deployment Management	Review & Validate Release	The contractor shall own and manage the entire Release and Deployment lifecycle in coordination with HCFA stakeholders and other third party providers									

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NFR-OM-131	Operations and Maintenance	Release Deployment Management	Plan Release	The contractor must develop and perform formal review process to clearly define and approve the release plans with HCFA's relevant stakeholders									
NFR-OM-132	Operations and Maintenance	Release Deployment Management	Plan Release	The review process must include project management planning, technical review of the Service Design Package (SDP) and configuration management report on the status of the to-be-deployed-to environment									
NFR-OM-133	Operations and Maintenance	Release Deployment Management	Build & Configure Release	The contractor shall produce formal documentation of all build notes and publish to HCFA's release manager to review and confirm that all build activities are complete									
NFR-OM-134	Operations and Maintenance	Release Deployment Management	Test & Accept Release	The contractor shall produce a formal test certificate as part of the release approval process. The Test certificate must follow the process and standards defined within the Test Management Plan									
NFR-OM-135	Operations and Maintenance	Release Deployment Management	Plan Deployment	The Release Plan for all new releases must involve and be published to all relevant IT and Business stakeholders across HCFA									
NFR-OM-136	Operations and Maintenance	Release Deployment Management	Plan Deployment	The Release Plan must take into consideration all dependencies and be closely aligned with HCFA's Change Management Plan									
NFR-OM-137	Operations and Maintenance	Release Deployment Management	Plan Deployment	The contractor will manage releases in a non-disruptive fashion, managing schedules that do not conflict with primary business operating and service delivery hours									
NFR-OM-138	Operations and Maintenance	Release Deployment Management	Plan Deployment	The contractor shall communicate to the HCFA team pre and post notifications if the RFC involves downtime in the production environment									
NFR-OM-139	Operations and Maintenance	Release Deployment Management	Plan Deployment	The contractor will include risk and risk mitigation plans for each release deployment									
NFR-OM-140	Operations and Maintenance	Release Deployment Management	Perform Operational Readiness	The contractor shall perform formal and documented Operational Readiness validation to ensure that there is appropriate knowledge transfer to the users impacted by the new release and the Service Desk that will be supporting the release. The Operational Readiness validation outputs must be published to HCFA for review and approval									
NFR-OM-141	Operations and Maintenance	Release Deployment Management	Deploy Release	The contractor shall develop and manage a formal and documented procedure to ensure the integrity of the release package and its constituent components throughout the transition activities. The procedure must be published to HCFA									
NFR-OM-142	Operations and Maintenance	Release Deployment Management	Deploy Release	The contractor shall communicate each release to the applicable HCFA IT and Business stakeholders following an approved communication plan which is shall be detailed within the Release and Deployment Plan									
NFR-OM-143	Operations and Maintenance	Release Deployment Management	Deploy Release	The contractor shall maintain segregation of duties between development and release management teams									
NFR-OM-144	Operations and Maintenance	Release Deployment Management	Go-Live for Release	The contractor shall manage deployment automation tools to increase efficiency, speed, and accuracy of the release									
NFR-OM-145	Operations and Maintenance	Release Deployment Management	Go-Live for Release	The contractor shall dedicate support resources, available at a capacity agreed upon by HCFA, to determine success of the deployment and resolve any resulting issues									
NFR-OM-146	Operations and Maintenance	Release Deployment Management	Manage Warranty Support	The contractor shall develop and manage a formal process to ensure that the new or changed service is capable of delivering the utility and warranty as agreed upon and stated by HCFA. The process must be published to HCFA and signed - off by HCFA's relevant stakeholders									
NFR-OM-147	Operations and Maintenance	Release Deployment Management	Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: <ul style="list-style-type: none"> - % of releases successfully meeting validation criteria to proceed to planning stage of the release - % increase/decrease in number of releases that meet customer expectations for cost, time and quality - % increase/decrease of releases where build completion is successful - % increase/decrease of releases where the component unit tests complete successfully - % increase/decrease of known errors and defects during testing of the release - % increase/decrease in successful test completions of the releases - % increase/decrease in time to approve and schedule releases - % increase/decrease of incidents solved by level 1 and level 2 support - % reduction in number of incidents due to incorrect components being deployed 									
NFR-OM-148	Operations and Maintenance	Asset Management	Request IT software / hardware asset	The contractor shall be responsible for identifying required software and hardware for TEDS activities. The contractor will identify interdependencies between existing assets and associated costs									
NFR-OM-149	Operations and Maintenance	Asset Management	Procure IT software / hardware	The contractor shall provide support to HCFA in all procurement activities related to IT assets									
NFR-OM-150	Operations and Maintenance	Asset Management	Procure IT software / hardware	The contractor is responsible for development and maintenance of an Asset Library to enable accurate and up-to-date tracking and monitoring of procured IT software / hardware assets									
NFR-OM-151	Operations and Maintenance	Asset Management	Deploy IT software / hardware assets	The contractor shall develop and manage a formal software / hardware asset deployment process. The deployment process must be published to HCFA for approval									
NFR-OM-152	Operations and Maintenance	Asset Management	Deploy IT software / hardware assets	The contractor shall be responsible for performing the test suite against the new assets, Following the process and standards defined within the Test Management Plan									

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NFR-OM-153	Operations and	Asset Management	Manage IT software / hardware assets	The contractor shall be responsible for implementation and maintenance of all TEDS related software / hardware assets									
NFR-OM-154	Operations and Maintenance	Asset Management	Manage IT software / hardware assets	The contractor is responsible for development and maintenance of an asset management tool(s) to allow HCFA a complete view of assets lifecycle, usage, regulatory compliance, costs, changes and viability									
NFR-OM-155	Operations and	Asset Management	Manage IT software / hardware assets	The contractor shall log and track assets in parallel with the CMDB									
NFR-OM-156	Operations and	Asset Management	Manage IT software / hardware assets	The contractor shall be ready for periodic asset audits performed by HCFA or 3rd parties									
NFR-OM-157	Operations and	Asset Management	Decommission / Retire IT Software / Hardware Assets	The contractor shall produce and publish to HCFA a formal software / hardware assets decommission and retirement process. The process must be approved by HCFA									
NFR-OM-158	Operations and Maintenance	Asset Management	Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: <ul style="list-style-type: none"> - Value of software products recorded in the IT Asset Management Repository - # of software licenses - Value of the hardware assets recorded in the IT Asset Management Repository - % of purchased software licenses available vs. filled - Identified subscription agreements automatically renewed - For each managed software product, the level of Compliance with licensing agreements - # of incidents opened against Software Asset Management activities - % of software requests fulfilled without a ticket - % of purchases for software performed outside of the official Procurement systems - % of available Hardware Assets against the total number of Hardware Assets - # of incidents opened against Hardware Asset Management activities - Value of the Hardware Assets being disposed of over a defined period of time 									
NFR-OM-159	Operations and	Event Management	Engineer & Configure Event Management System	The contractor shall produce and maintain formal definitions for commonly occurring events based of leading industry practices.									
NFR-OM-160	Operations and	Event Management	Engineer & Configure Event Management System	The contractor shall produce, maintain and enforce formal event handling procedures.									
NFR-OM-161	Operations	Event Management	Detect & Log Event	The contractor shall produce and enforce formal procedures for detection and logging of events.									
NFR-OM-162	Operations and	Event Management	Detect & Log Event	The contractor shall produce and maintain event logs in compliance with HCFA's policies and procedures.									
NFR-OM-163	Operations and	Event Management	Correlate & Filter Event	The contractor shall produce formal process and documentation determining filtering definitions, policies, and procedures. The documentation must be published to HCFA for approval.									
NFR-OM-164	Operations	Event Management	Correlate & Filter Event	The contractor shall implement fully automated correlation engines for grouping of events.									
NFR-OM-165	Operations and	Event Management	Correlate & Filter Event	The correlation rules that drive the correlation engines must be published to HCFA and continuously reviewed for improvement opportunities.									
NFR-OM-166	Operations	Event Management	Correlate & Filter Event	The contractor shall configure each triage tool to integrate.									
NFR-OM-167	Operations and	Event Management	Select Event Response	The contractor shall communicate all events to the appropriate HCFA and HCFA's partners, functions that need to be informed or take further control actions.									
NFR-OM-168	Operations and	Event Management	Review & Close Event	The contractor shall develop and manage a formal event review process. The process and the findings must be published to HCFA,									
NFR-OM-169	Operations	Event Management	Review & Close Event	The contractor shall log corrective actions and close out event.									

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					Out of the Box	Configuration	Custom Design and Development	Does not meet					
NFR-OM-170	Operations and Maintenance	Event Management	Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: <ul style="list-style-type: none"> - Number of events/alerts generated without actual degradation of service/functionality (false positives) - indication of the accuracy of the instrumentation parameters, important for CSI). - Number and ratio of events compared with the number of incidents - Number and percentage of each type of event per platform or application versus total number of platforms and applications underpinning live IT services (looking to identify IT services that may be at risk for lack of capability to detect their events) - Number and percentage of repeated or duplicated events (this will help in the tuning of the correlation engine to eliminate unnecessary event generation and can also be used to assist in the design of better event generation functionality in new services) - Number and percentage of events that required human intervention and whether this was performed - Number of incidents that occurred and percentage of these that were triggered without a corresponding event - Number and percentage of incidents that were resolved without impact to the business (indicates the overall effectiveness of the event management process and underpinning solutions) - Number and percentage of events that resulted in incidents or changes - Number and percentage of events caused by existing problems or known errors (this may result in a change to the priority of work on that problem or known error) - Number and percentage of events indicating performance issues (for example, growth in the number of times an application exceeded its transaction thresholds over the past six months) - Number and percentage of events indicating potential availability issues (e.g. failovers to alternative devices, or excessive workload swapping) 									
NFR-OM-171	Operations and Maintenance	Incident Management	Interaction Handling	The contractor shall develop and manage an Incident Management Plan that that establishes the processes and standards for which the vendor will manage the lifecycle of incidents. The SI's Incident Management Plan must integrate with existing HCFA and other third party providers processes.									
NFR-OM-172	Operations and Maintenance	Incident Management	Interaction Handling	The contractor shall outline their monitoring/alerting procedures within the Incident Management Plan that addresses but is not limited to the following: <ul style="list-style-type: none"> o Alerting capability on any and all hardware, systems, applications, and access points o Identifying errors in processing input files and/or output files. This alerting system would capture errors in the interface application(s) o Communication Plan that includes escalation procedures. o Root cause analysis with development of action plans and implementation of solution/workaround o Well-refined process for resolving system issues 									
NFR-OM-173	Operations and Maintenance	Incident Management	Incident Detection & Logging	The contractor shall be responsible for maintaining 24/7/365 production support (service desk) to coordinate incident identification, investigation, and diagnosis with HCFA and other 3rd party providers.									
NFR-OM-174	Operations and Maintenance	Incident Management	Incident Detection & Logging	The contractor shall manage and maintain a tool that enables HCFA visibility into incident management and integrates with other service management capabilities such as Change Management and Configuration Management. The contractor shall leverage existing state tools where available and possible. Investigation & Diagnosis: Research into the incident through data gathering and lookups against knowledge bases.									
NFR-OM-175	Operations and Maintenance	Incident Management	Incident Detection & Logging	The contractor shall be responsible for investigating and diagnosing incidents. All procedures and findings must be documented in incident management tool and visible to HCFA.									
NFR-OM-176	Operations and Maintenance	Incident Management	Incident Detection & Logging	The contractor shall perform root cause analysis for all incidents and communicate the findings to HCFA and other 3rd party providers.									
NFR-OM-177	Operations and Maintenance	Incident Management	Resolution & Recovery	The contractor shall be responsible for identifying and enacting resolutions to incidents. In cases where a permanent resolution is not currently available, a temporary work around must be provided.									
NFR-OM-178	Operations and Maintenance	Incident Management	Resolution & Recovery	The contractor shall be responsible for validating that the incident has been resolved and obtaining end-user signoff.									
NFR-OM-179	Operations and Maintenance	Incident Management	Closure	The contractor shall develop and manage incident closure procedures.									

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					Out of the Box	Configuration	Custom Design and Development	Does not meet					
NFR-OM-180	Operations and Maintenance	Incident Management	Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: <ul style="list-style-type: none"> - Total process time to resolve incidents by priority and by category - Effort to resolve incidents by priority and by category - Number of incidents at each stage (by status) - Size of current incident workload for each IT service - Number and percentage of major incidents (priority 1 & 2 incidents) - Number and percentage of tickets aging longer than defined time periods (10 days, 20 days etc.) - Total number of incidents - Number of major incidents - Number of tickets still open by time periods, status and priority 									
NFR-OM-181	Operations and Maintenance	Problem Management	Record, Classify, Prioritize	The contractor shall be responsible for detecting, recording, classifying, and prioritizing problems.									
NFR-OM-182	Operations and Maintenance	Problem Management	Record, Classify, Prioritize	The contractor shall address the procedures and standards for handling problems within their Incident Management Plan.									
NFR-OM-183	Operations and Maintenance	Problem Management	Investigate and Diagnose	The contractor shall be responsible for investigating and diagnosing problems. All procedures and findings must be documented in an IT Service Management tool.									
NFR-OM-184	Operations and Maintenance	Problem Management	Investigate and Diagnose	The contractor will manage and lead all incident / problem determination / problem resolution activities associated with the TEDS application including any issue / incident / problems related to 3rd party causes.									
NFR-OM-185	Operations and Maintenance	Problem Management	Resolve Problem	The contractor shall be responsible for identifying and enacting resolutions to incidents. In cases where a permanent resolution is not currently available, a temporary work around must be provided.									
NFR-OM-186	Operations and Maintenance	Problem Management	Resolve Problem	The contractor shall be responsible for validating that the incident has been resolved the obtaining end-user signoff.									
NFR-OM-187	Operations and Maintenance	Problem Management	Close Problem	The contractor shall develop and manage incident closure procedures.									
NFR-OM-188	Operations and Maintenance	Problem Management	Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: <ul style="list-style-type: none"> - % of availability of IT services by % reduction in the number and duration of incidents through performing root cause analysis and implement permanent fixes for identified problems, and performing proactive problem management - % reduction in number of incidents and through shared knowledge bases (problem Known Errors) - % change of costs on workarounds or fixes that do not work 									
NFR-OM-189	Operations and Maintenance	Request Management	Initiate Request	The contractor shall be responsible for identifying needs to support TEDS and initiating, classifying, and fulfilling requests. The contractor shall be required to create a justification case for each request and submit to HCFA for approval.									
NFR-OM-190	Operations and Maintenance	Request Management	Validate & Classify Request	The contractor shall provide and manage a tool logging, recording, and categorizing requests.									
NFR-OM-191	Operations and Maintenance	Request Management	Validate & Classify Request	The contractor shall be responsible for developing procedures and criteria for validating and classifying requests.									
NFR-OM-192	Operations and Maintenance	Request Management	Evaluate Request	The contractor shall be responsible for communicating requests to HCFA for evaluation and approval.									
NFR-OM-193	Operations and Maintenance	Request Management	Fulfil Request	Once request is approved, the contractor shall be responsible for fulfilling requests in accordance with HCFA's standards.									
NFR-OM-194	Operations and Maintenance	Request Management	Review & Close Request	The contractor shall be responsible for the validating the request has been fulfilled and meets the needs of the end-user.									
NFR-OM-195	Operations and Maintenance	Request Management	Review & Close Request	Once the end-user validates the request has been fulfilled, the contractor shall be responsible for closing out request.									
NFR-OM-196	Operations and Maintenance	Request Management	Cancel Request	The contractor shall produce and publish to HCFA a formal request cancelation document.									

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NFR-OM-197	Operations and Maintenance	Request Management	Key Performance Indicators	The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for: <ul style="list-style-type: none"> - Percent of requests fulfilled within SLA - Percent of unfulfilled requests (orphaned requests) - Percent of requests fulfilled that are authorized - Breakdown of requests at each stage including Approval stage (to help with identifying backlogs and bottlenecks) - Meantime to fulfil by different parameters such as category, fulfillment group etc. - Average user/customer survey score (total and by question category) - Percent of incidents opened against fulfilled requests - Percent of requests fulfilled without any contact to the Service Desk, via self service - Percent of RFCs submitted for fulfillment of requests - Percent of requests handled by Tier 1 and fulfilled on first interaction - Total number of requests (as a control measure) - The average cost per type of service request 									
NFR-OM-198	Operations and Maintenance	Technology Operations	IT Operations Control	The contractor shall maintain a 24/7/365 Network Operations Center (NOC) within the service desk in close coordination with the infrastructure service provider (STS).									
NFR-OM-199	Operations and Maintenance	Technology Operations	IT Operations Control	The contractor shall leverage existing tools and processes within the STS NOC where available and possible.									
NFR-OM-200	Operations and Maintenance	Technology Operations	Console Management	The contractor shall maintain 24/7/365 console management strategies within the Service Desk providing support to STS and HCFA IS									
NFR-OM-201	Operations and Maintenance	Technology Operations	Console Management	Review TEDS batch jobs requests, validate schedules, and coordinate computer processing time based on system priorities, program run-time, processing, and restart requirements; considering batch and production windows / schedules.									
NFR-OM-202	Operations and Maintenance	Technology Operations	Online and Batch Job Management	The contractor shall maintain 24/7/365 Online and Batch Job management procedures within the service desk providing support to STS.									
NFR-OM-203	Operations and Maintenance	Technology Operations	Online and Batch Job Management	The contractor shall provide any / all scheduling information and monitoring tools to meet the requirements of this contract.									
NFR-OM-204	Operations and Maintenance	Technology Operations	Backup and Restore	The contractor shall develop and maintain backup and restore procedures to support HCFA technical teams through the SDLC process.									
NFR-OM-205	Operations and Maintenance	Technology Operations	Backup and Restore	The contractor shall provide backup and restore completion reports to HCFA for review during periodic service level review meetings.									
NFR-OM-206	Operations and Maintenance	Technology Operations	Backup and Restore	The contractor will perform a random data restore test on a monthly bases that demonstrates successful backup / recovery strategies.									
NFR-OM-207	Operations and Maintenance	Technology Operations	Storage and Archive	The contractor shall comply with the storage archiving and purging policies and procedures established by HCFA.									
NFR-OM-208	Operations and Maintenance	Technology Operations	Server and Hardware Management and Support	The contractor shall maintain a 24/7/365 service desk within the service desk providing support to STS and HCFA IS									
NFR-OM-209	Operations and Maintenance	Technology Operations	Server and Hardware Management and Support	The contractor shall leverage existing tools and processes when possible within the STS NOC.									
NFR-OM-210	Operations and Maintenance	Technology Operations	Network Management	The contractor shall partner and leverage existing tools and processes within the STS NOC.									
NFR-OM-211	Operations and Maintenance	Technology Operations	Database Administration	The contractor shall monitor the Database.									
NFR-OM-212	Operations and Maintenance	Technology Operations	Directory Services Management	The contractor shall develop a solution that is compatible with HCFA's directory services and Identity Management solution.									
NFR-OM-213	Operations and Maintenance	Technology Operations	Directory Services Management	The SI, in coordination with STS and HCFA IS, shall monitor events on the directory services, such as unsuccessful attempts to access a resource, and taking the appropriate action where required.									
NFR-OM-214	Operations and Maintenance	Technology Operations	Middleware (Application/Internet/Web) Management	The SI, in coordination with HCFA and the Technical Advisory Services function, shall ensure that appropriate middleware solutions for the TEDS solution are chosen and that they can perform optimally when they are deployed.									
NFR-OM-215	Operations and Maintenance	Technology Operations	Middleware (Application/Internet/Web) Management	The SI, in coordination with STS, shall detect and resolve issues related to TEDS middleware.									
NFR-OM-216	Operations and Maintenance	Technology Operations	Facilities and Data Center Management	The contractor shall comply with the existing processes and standards for Data Center Management provided by STS, and leverage STS services for maintaining the TEDS infrastructure.									

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					Out of the Box	Configuration	Custom Design and Development	Does not meet				REQ Met? (Y / N / P)	Reviewer Comment
NFR-OM-217	Operations and Maintenance	Technology Operations	Key Performance Indicators	<p>The contractor shall track and monitor metrics through reports on a frequency agreed upon with the State for:</p> <ul style="list-style-type: none"> - Number of technology operation related incidents - Number of escalations and reason for those escalations - Number of changes implemented and backed out - Number of unauthorized changes detected - Number of releases deployed, total and successful - Number of maintenance windows exceeded - Number and ratio of events compared with the number of incidents - Number of incidents that occurred and percentage of these that were triggered without a corresponding event - Percentage reduction in the number of SLA breaches due to either poor server or mainframe performance or poor component performance - Percentage reduction in the over-capacity for technology purchases - Percentage reduction in the business disruption caused by a lack of adequate capacity - Percentage reduction in the unavailability - Percentage increase in the reliability - Percentage improvement in overall end-to-end availability of service - Percentage reduction in the unavailability of service - Percentage reduction in the number of incidents due to poor technology performance - Reports on access to the facility 									