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<b>Legal Name:</b> Elixir Lab USA Inc	<b>Published Date:</b> 6/9/23
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<b>Response Time:</b> 10:39	<b>Solicitation Description:</b> CLOUD BASED STATEWIDE CASE MANAGEMENT SYSTEM
<b>Responded By User ID:</b> Cardinality <input type="button" value="Upload"/>	<b>Total of Header Attachments:</b> 1
<b>First Name:</b> Ganesharatnam	<b>Total of All Attachments:</b> 1
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<b>Phone:</b> 3123423776	



Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	One Time Implementation	0.00000	EA	676848.000000	0.00

Comm Code	Manufacturer	Specification	Model #
43232200			

**Commodity Line Comments:** Inclusions:  
 Microsoft Azure or AWS Cloud Hosting  
 Cardinality License to use & make configuration changes the Platform  
 2 upgrades per year  
 Hot fixes, Patches, API & documentation updates  
 60 days warranty support included in one time implementation  
 3rd Party license for Workflow Engine & MicroStrategy  
 L1 & L2 support  
 Level 3 Technical Support to State Agency developers with platform issues, how to & enquiries  
 Exclusions:  
 3rd Party license for ESB & BRM  
 Data migration & conversion  
 Integrations to external systems

**Extended Description:**  
 One Time Implementation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
2	Initial Year Term	5.00000	YR	197136.000000	985680.00

Comm Code	Manufacturer	Specification	Model #
43232200			

**Commodity Line Comments:** Inclusions:  
 Microsoft Azure or AWS Cloud Hosting  
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 3rd Party license for ESB & BRM  
 Data migration & conversion  
 Integrations to external systems

**Extended Description:**  
 Initial Year Term

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
3	Year One Optional Renewal	0.00000	YR	206993.000000	0.00

Comm Code	Manufacturer	Specification	Model #
43232200			

**Commodity Line Comments:** Inclusions:  
 Microsoft Azure or AWS Cloud Hosting  
 Cardinality License to use & make configuration changes the Platform  
 2 upgrades per year  
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 Exclusions:  
 3rd Party license for ESB & BRM  
 Data migration & conversion  
 Integrations to external systems

**Extended Description:**

Year One Optional Renewal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
4	Year Two Optional Renewal	0.00000	YR	217343.000000	0.00

Comm Code	Manufacturer	Specification	Model #
43232200			

**Commodity Line Comments:** Inclusions:  
 Microsoft Azure or AWS Cloud Hosting  
 Cardinality License to use & make configuration changes the Platform  
 2 upgrades per year  
 Hot fixes, Patches, API & documentation updates  
 60 days warranty support included in one time implementation  
 3rd Party license for Workflow Engine & MicroStrategy  
 L1 & L2 support  
 Level 3 Technical Support to State Agency developers with platform issues, how to & enquiries  
 Exclusions:  
 3rd Party license for ESB & BRM  
 Data migration & conversion  
 Integrations to external systems

**Extended Description:**

Year Two Optional Renewal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
5	Year Three Optional Renewal	0.00000	YR	228210.000000	0.00

Comm Code	Manufacturer	Specification	Model #
43232200			

**Commodity Line Comments:** Inclusions:  
 Microsoft Azure or AWS Cloud Hosting  
 Cardinality License to use & make configuration changes the Platform  
 2 upgrades per year  
 Hot fixes, Patches, API & documentation updates  
 60 days warranty support included in one time implementation  
 3rd Party license for Workflow Engine & MicroStrategy  
 L1 & L2 support  
 Level 3 Technical Support to State Agency developers with platform issues, how to & enquiries  
 Exclusions:  
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 Data migration & conversion  
 Integrations to external systems

**Extended Description:**

Year Three Optional Renewal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
6	Additional user licenses	1.00000	EA	9857.000000	9857.00

Comm Code	Manufacturer	Specification	Model #
43232200			

**Commodity Line Comments:** Price provided is for 1 named user license per year without discount

**Extended Description:**

Additional user licenses

# West Virginia Department of Health and Human Resources, Office of Inspector General



## Cloud Based Statewide Case Management System

Request for Quotation (RFQ) No. CRFQ 0506 MIS2300000003

### Technical Proposal

<b>Submitted by</b> Elixir Lab USA Inc (d/b/a Cardinality.ai) 267 Kentlands Boulevard Suite #5092 Gaithersburg, MD 20878 Email: sales@cardinality.ai www.Cardinality.ai	<b>Submitted to</b> Crystal Husted 2019 Washington Street, East Charleston, WV 25305 Email: <a href="mailto:Crystal.G.Husted@wv.gov">Crystal.G.Husted@wv.gov</a>
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*This proposal contains information that shall not be disclosed by the customer and shall not be duplicated, used, or disclosed in whole or in part for any reason other than to evaluate this proposal. If, however, a contract is awarded to Elixir Lab USA Inc as a result of or in connection with the submission of this proposal, the customer shall have the right to duplicate, use, or disclose the data to the extent provided.*

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# 1. Cover Letter

June 29, 2023  
Ms. Crystal Husted  
The State of West Virginia Purchasing Division,  
Department of Health and Human Resources (WVDHHR),  
Office of Inspector General

Dear Ms. Husted,

Cardinality appreciates the opportunity to respond to the RFQ for the Case Management System (CMS) for the West Virginia Department of Health and Human Services (WVDHHR).

We applaud the efforts by your agency to empower the Foster Care Ombudsman (FCO) in advocating for the rights of foster care children and foster care parents in West Virginia. By utilizing Cardinality's fully-built solution, FCO can mitigate the risk associated with building a solution from scratch.

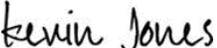
How can Cardinality help FCO succeed?

- **Configure, not build** - Cardinality's 92% out-of-the-box availability offers an accelerated implementation timeline and significant cost benefits to FCO.
- **Outcome Driven** - Maryland DHS is gleaning great data from Cardinality's CMS solution:
  - 70% reduction in cases with recurrence of maltreatment for children.
  - 25% decrease in removal of the child from home per 1,000 children even though the overall increase in # of cases reported.
  - 22% reduction in re-entry in the foster care system after reunification with the family of origin.
- **Long-Term Solution** - Flexible, modular architecture allows the solution to expand its capabilities to meet future FCO needs as well as Federal and State mandates.
- **Agency Ownership** - Cardinality's software is designed to empower agency and/or state IT professionals to perform the needed configurations and updates without the need for costly change orders.

Cardinality's mission is to impact one billion lives around the globe. With over 10 million Americans already benefiting from Cardinality's applications, it would be our pleasure to add the state of West Virginia to our family and help you achieve remarkable outcomes for your citizens.

If you have any questions or need further information, please reach out to us at [Sales@cardinality.ai](mailto:Sales@cardinality.ai) or 317-629-7054.

Respectfully,

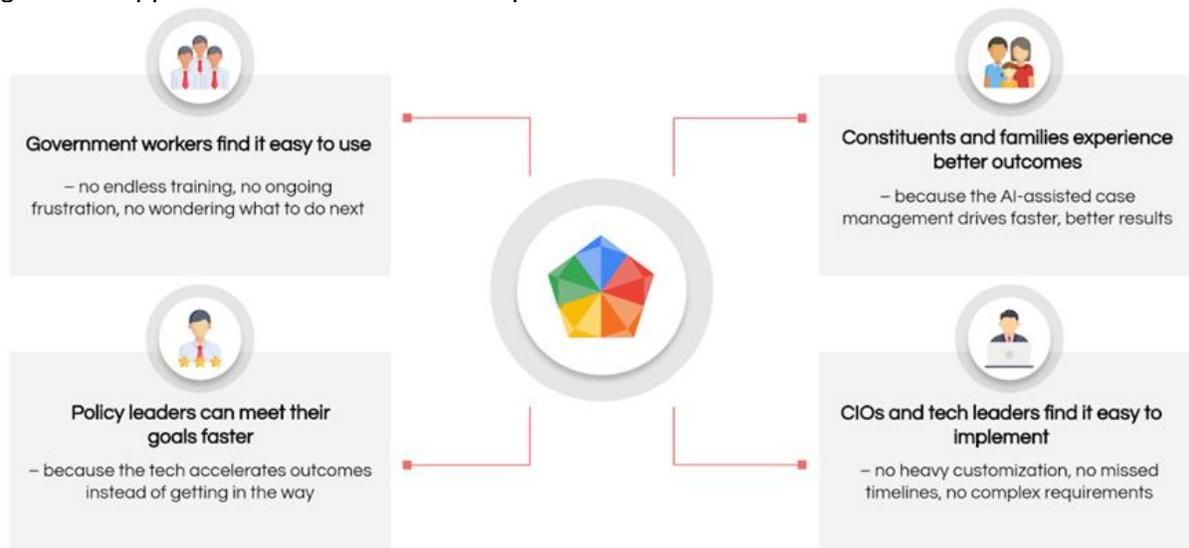


Kevin Jones  
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## 2. Executive Summary

Cardinality is pleased to submit this response to the referenced solicitation and acknowledge the receipt of RFQ No. CRFQ 0506 MIS2300000003 from the West Virginia Purchasing Division for the WVDHHR.

At Cardinality, our program-specific solutions are designed specifically for agency success. With configurable modules, cloud-based tech, a powerful AI assistant, and an intuitive interface, they are designed to support the roles of all relevant parties.



**Figure 1.** Cardinality's Solution Designed for Agency Success

With Cardinality, agencies modernize existing systems faster than custom or unproven solutions, with higher confidence of success, and lesser lifetime costs of ownership.

### 2.1 The Current Challenges Faced by FCO

Cardinality recognizes the importance of addressing the challenges in foster care management, faced by the FCO, as outlined in the RFQ.

- **Advocating for the rights of foster children and foster parents:** Addressing any issues or concerns they may have and advocating for their needs within the child welfare system.
- **Investigating and resolving complaints:** Participating in procedures to resolve these complaints and ensuring that appropriate actions are taken to address any issues raised.
- **Monitoring legislation, regulations, and policies:** Staying updated on changes in the legal and policy landscape and assessing their impact on foster children and foster parents.
- **Establishing and maintaining a Statewide reporting system:** Collecting and analyzing data about problems faced by foster children and foster parents across the State.
- **Generating and distributing reports:** Serving the needs and interests of various stakeholder groups, providing them with relevant and timely information about the state of foster care services.
- **Case management and system support:** Managing tasks such as receiving, evaluating, referring, assigning, monitoring, investigating, and reporting on child welfare-related concerns, complaints, and systemic issues.

## 2.2 Cardinality's Comprehensive Case Management Solution Overview

Cardinality, through its pre-built solutions and technology, meets the requirements for the proposed comprehensive Case Management Solution (CMS). Our fit-gap analysis of the requirements has 92% of functionalities available out of the box. The remaining 8% are a combination of configurations and low to medium-level customizations that can be achieved within 12 months of the project kick-off.

Cardinality's HHS-specific platform, a pre-built, and proven Case Management Solution (CMS) guarantees a more confident implementation timeline and cost savings compared to generic platforms, reducing the overheads on FCO's teams. The proposed CMS, built on its proprietary PICS low-code platform, was previously used for the MD THINK program in Maryland, as part of the Child, Juvenile, and Adult Management System (CJAMS) project. Furthermore, it is currently being implemented to assist Georgia DHS with Medicaid redetermination.

This innovative system simplifies the process of managing investigations and resolution of complaints. It empowers FCO's caseworkers, supervisors, and administrators to provide a seamless case management experience for foster children and parents.

Here are some key features of the proposed CMS:



**Figure 2.** Key Features of the Proposed CMS

One of the notable advantages of this system is its quick implementation of compliant features, guaranteeing successful deployment. *It leverages configurable modules based on the PICS low-code platform that is secure and cloud-based, with a specialized AI engine for Health and Human Services.* The low-code nature of this environment offers ease of interoperability with data sources and workflows, significantly reducing maintenance costs. Moreover, Cardinality will also offer ongoing support, training, and guidance to ensure the system remains up to date with industry standards.

Cardinality's advanced CMS meets FCO's evolving needs with high performance, flexibility, and scalability. Our proven techniques and adherence to State standards ensure consistent business process standardization and optimal performance for concurrent users and high transaction volumes.

### The highlights of our CMS include

- the use of Commercial Off-The-Shelf (COTS) solutions.
- a browser-based interface for minimal client system requirements.
- a modular architecture that separates presentation and business logic. This approach enables easy deployment, maintenance, and integration with existing systems while promoting flexibility, scalability, and reusability.

Our CMS maintains end-to-end data integrity through robust data validation, encryption, and access controls. It enhances efficiency and customization ease through declarative and attribute-oriented programming methods. Streamlined deployment and configuration make setup and maintenance hassle-free. The modular design allows for easy enhancements to adapt to future updates. With Cardinality's solution, the FCO gains valuable data insights and worker analytics for better strategic planning.

### 2.2.1 Key Features/Benefits of the Solution

Our solution offers, but is not limited to, the following features/benefits:

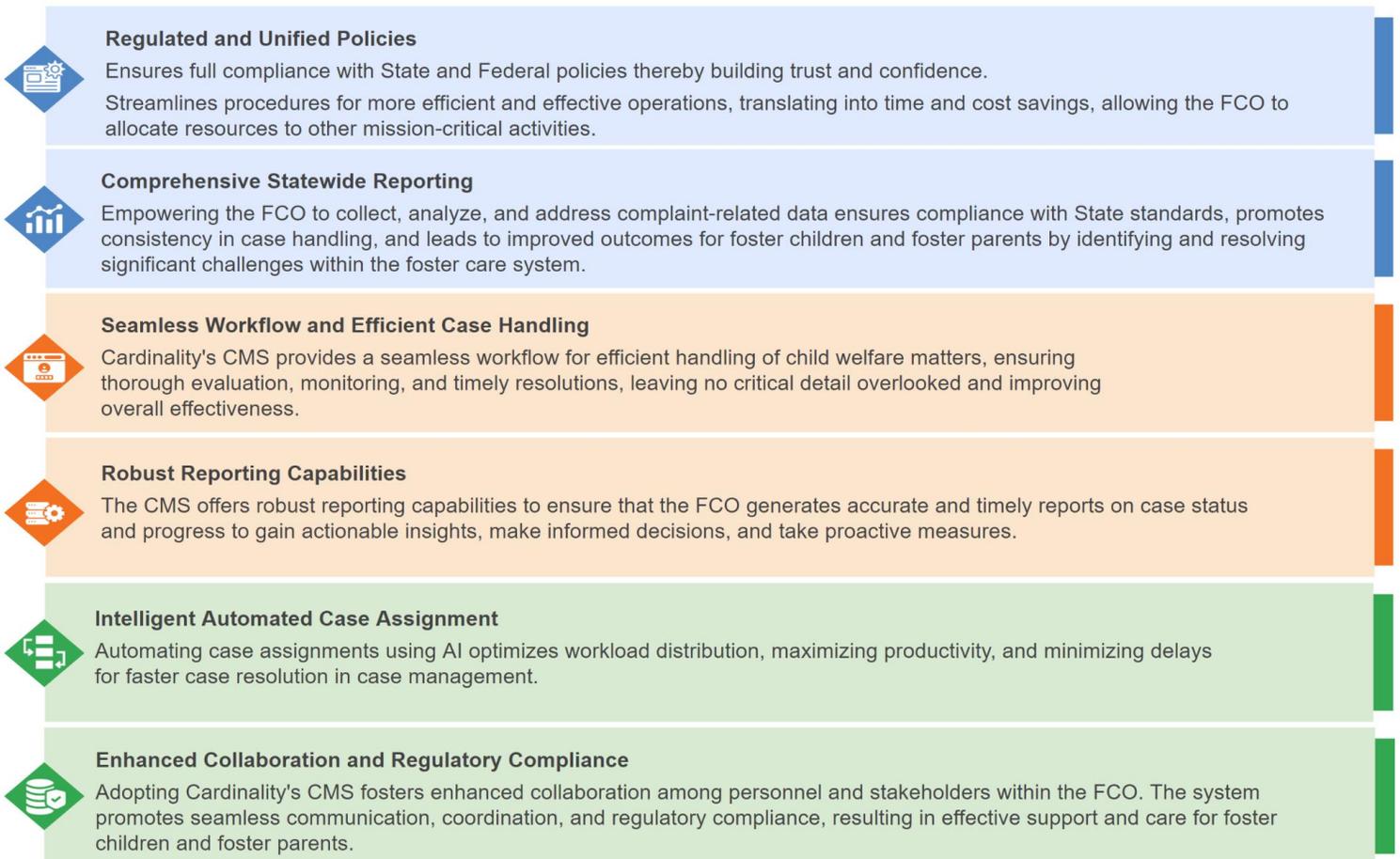


Figure 3. Key Features and Benefits of the Solution

## 2.3 Cardinality as the Preferred Partner

The following key factors position Cardinality as the preferred partner for this project

- Cardinality's pre-built solution and 92% out-of-the-box availability offer an accelerated implementation timeline and significant cost benefits to WVDHHR.
- Deep understanding of the importance of secure data management and the protection of case information.
- Compliance with State and Federal regulations, ensuring the confidentiality and integrity of users' data.
- Strong background in designing user-friendly interfaces and seamless data connectivity.
- Multiple success stories and references of similar implementations reinforcing our commitment to successful public sector modernization.
- Outcomes-focused partnership for agencies to improve lives, through government-specific solutions that prioritize end-user needs.
- Pre-built templates that optimize user experience without compromising configurability.
- Transparent commercial terms and pricing model based on an outcome-driven investment.

## 2.4 Conclusion

Thank you for the opportunity to submit our response to this RFQ. We understand and endorse West Virginia's need to deploy a certified and flexible Case Management System that offers the convenience of a Software-as-a-Service (SaaS) model, enabling easy customization and modernization of its existing foster care infrastructure.

Cardinality is fully equipped to provide the modernized system that the agency truly deserves. Cardinality's approach empowers caseworkers, supervisors, and administrators with the essential tools, processes, and technology to revolutionize their work. By enabling them to operate smarter and faster, they can dedicate increased time and undivided attention to the foster children and families who rely on their support. Our commitment extends beyond implementation. We provide ongoing support, comprehensive training, and invaluable guidance, ensuring that West Virginia's Foster Care Management System remains at the forefront of innovation and aligns with industry best practices.

### 3. Company Overview

Elixir Lab USA Inc (d/b/a Cardinality.ai) is a data technology company that delivers solutions that help governments achieve better outcomes by eliminating friction and improving the experience of citizens and government workers using Artificial Intelligence (AI) solutions. More than 5,000 caseworkers across five states, 10+ nonprofits, and healthcare providers are already utilizing Cardinality's ready-built AI solutions to modernize their digital engagement with citizens.

Cardinality.ai has been recognized as a GovTech 100 company in 2020, 2021, 2022, and 2023 as the SaaSBOOMi vertical SaaS startup of 2020 and AWS SLG Partner of the Year in 2022. The company's suite of solutions is built specifically for the health and human services workforce to allow for rapid implementation, lower cost of operations, and higher rates of impact.



Cardinality, a digital modernization leader offering a proven track record in Indiana, Maryland, Wyoming, Georgia, and Oregon, is uniquely positioned to provide an outcome-accelerating solution. We offer a broad portfolio of SaaS-based business solutions across the HHS and Workforce industries, with expertise in Social Services & Grants, Family & Health, Claims and Collections, and Workforce & Jobs domains. The figure below provides an overview of our clientele.

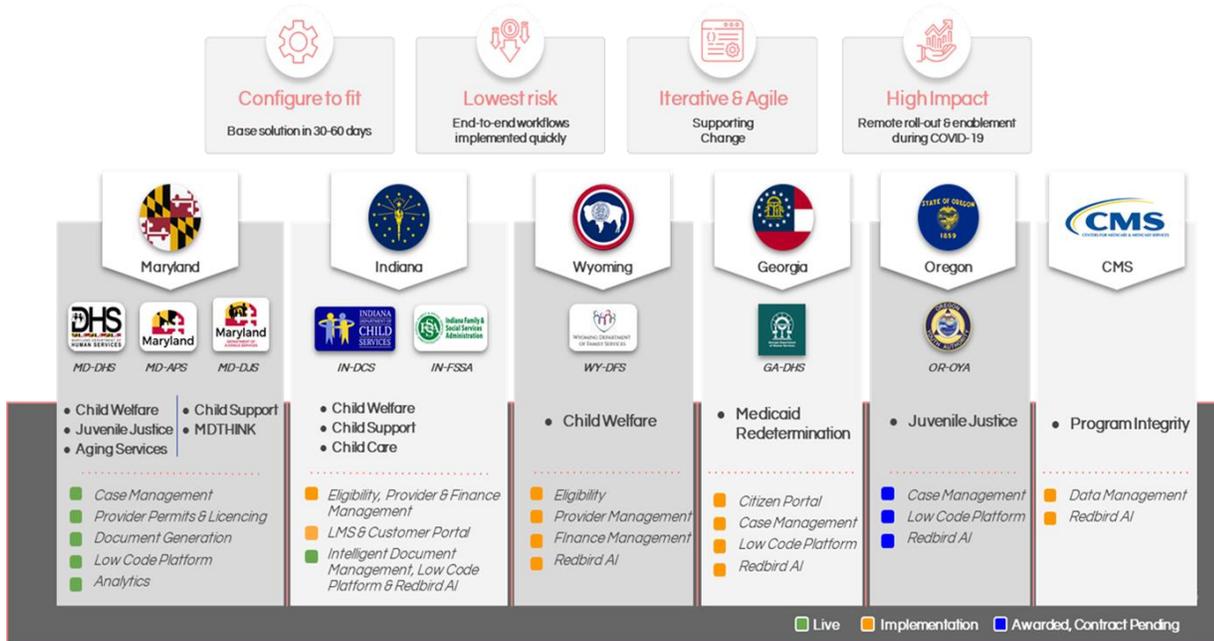


Figure 4. Cardinality's Clientele

## 4. References

Cardinality's Case Management Solution is live in the State of Maryland and is currently being implemented in Georgia. The table below provides an overview of these implementations:

<b>Maryland Department of Human Services                      Child, Juvenile, and Adult Management System (CJAMS)</b>	
<b>Primary Contact</b>	<p><b>Name:</b> Subramanian Muniasamy  <b>Title:</b> Former Executive Director, MD THINK  <b>Current Role:</b> Chief Information Officer, Georgia Office of Commissioner of Insurance and Safety Fire  <b>Phone:</b> +1 603-568-0995  <b>Email:</b> <a href="mailto:smuniasamy@oci.ga.gov">smuniasamy@oci.ga.gov</a></p>
<b>Project Description</b>	<p>MD THINK (Maryland Total Human Services Integrated Network) initiative is a secure cloud-based technology platform for human services programs. The vision behind MD THINK was to enable government workers to serve Maryland citizens using modern, flexible, and personalized applications into the future.</p> <p>MD THINK allows DHS and other participating agencies in Maryland such as the MD Department of Health, Department of Juvenile Services, the Maryland Health Benefit Exchange, and others host their applications and share data and operational workflows wherever applicable to provide streamlined services and a no-wrong-door approach to Maryland residents.</p> <p>The Cardinality platform was utilized at MD THINK to build a modern, intuitive &amp; mobile-friendly case management system. It presented a transition from a program-centric to a client-centric approach to case intake and management, as well as eligibility determination and analytics.</p> <p>MD THINK brings modern capabilities related to business workflows, security, assessments, and analytics in providing intuitive self-service options to Maryland residents various public assistance services within the shared services platform.</p> <p>Cardinality's configurable low-code platform with multiple functional modules providing capabilities around workflows, assessments, analytics, APIs, etc. was leveraged to build a modern, intuitive &amp; mobile-friendly Child, Juvenile &amp; Adult Management System, components of which were also leveraged by other applications that were being modernized. Cardinality baseline solution and platform met 88% of CCWIS requirements, and over 70% of State child welfare requirements. Cardinality configured the remaining custom functionalities based on requirements provided by the State. A sandbox was provisioned for the State with the configured functionalities within 60 days of development kick-off.</p> <p>The platform across child, adult, and juvenile welfare has 300+ screens, multiple workflows, and integrations with over 18 inter/intra-agency systems.</p>

	<p>Finally, the implementation also included the seamless migration of close to 12 million records within four months from various entities, including MD DHS and the Maryland Department of Health (MDH).</p> <p>The platform was implemented in Maryland jurisdictions over four phases of deployment, starting with a pilot with 5% of the caseload, followed by incremental modernization and deployment in the other counties. The full pilot was achieved in 19 months from project start and statewide deployment in 27 months from project start.</p> <p>The system represents the only open-source, CCWIS-compliant multi-agency platform in the US. The platform is used by around 5,000 caseworkers in the State of Maryland.</p>
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## Indiana Department of Child Services (IN DCS) - Indiana Comprehensive Child Welfare Information System (CCWIS)

<b>Primary Contact</b>	<p><b>Name:</b> Troy Barnes  <b>Title:</b> Director of IT Product Delivery  <b>Phone:</b> 317-447-8044  <b>Email:</b> <a href="mailto:troy.barnes@dcs.in.gov">troy.barnes@dcs.in.gov</a></p>
<b>Project Description</b>	<p>The State of Indiana was looking to replace its legacy SACWIS, known as the "Management Gateway for Indiana's Kids" (MaGIK). The legacy system consists of two components: Casebook (for case management) and KidTraks (for provider management and payment system). IN DCS is following a two-phase approach for replacing the legacy system, the first phase would be the replacement of the case management features, and the second phase to replace ancillary case management (e.g., referral management and financial management) and KidTraks.</p> <p>Our solution is based on a multi-cloud strategy where most of the user engagement-rich modules are developed in Salesforce and process-intensive modules are developed and hosted on AWS. This new system will help IN DCS to improve its ability to provide services; enable staff to drastically reduce administrative workload and focus on field activity to drive measurable outcomes for child welfare; and assist agency leadership in their effort to achieve the safety, permanency, and wellbeing of children and families in their care. The system supports all major processes and programs such as Family Preservation, Foster Care, Adoption, Guardianship, Collaborative Care, and Medicaid.</p> <p>The scope of the Pilot and Phase 1 of this Child Welfare project focuses on Eligibility including, foster care, collaborative care, guardianship, Medicaid, adoptions, and family preservation. Phase 2 of the project will cover all the Financial processes needed for child welfare case management, including Medicaid cases involving Social Security Income (SSI) benefits. Phase 2 is planned for March of 2023</p> <p>Post complete deployment, the system will be used by around 7K internal users and 3K external users. In its end state, the system will be hosted on AWS and have</p>

	approximately 130 screens and about 45 workflows specific to Financial and Eligibility modules.
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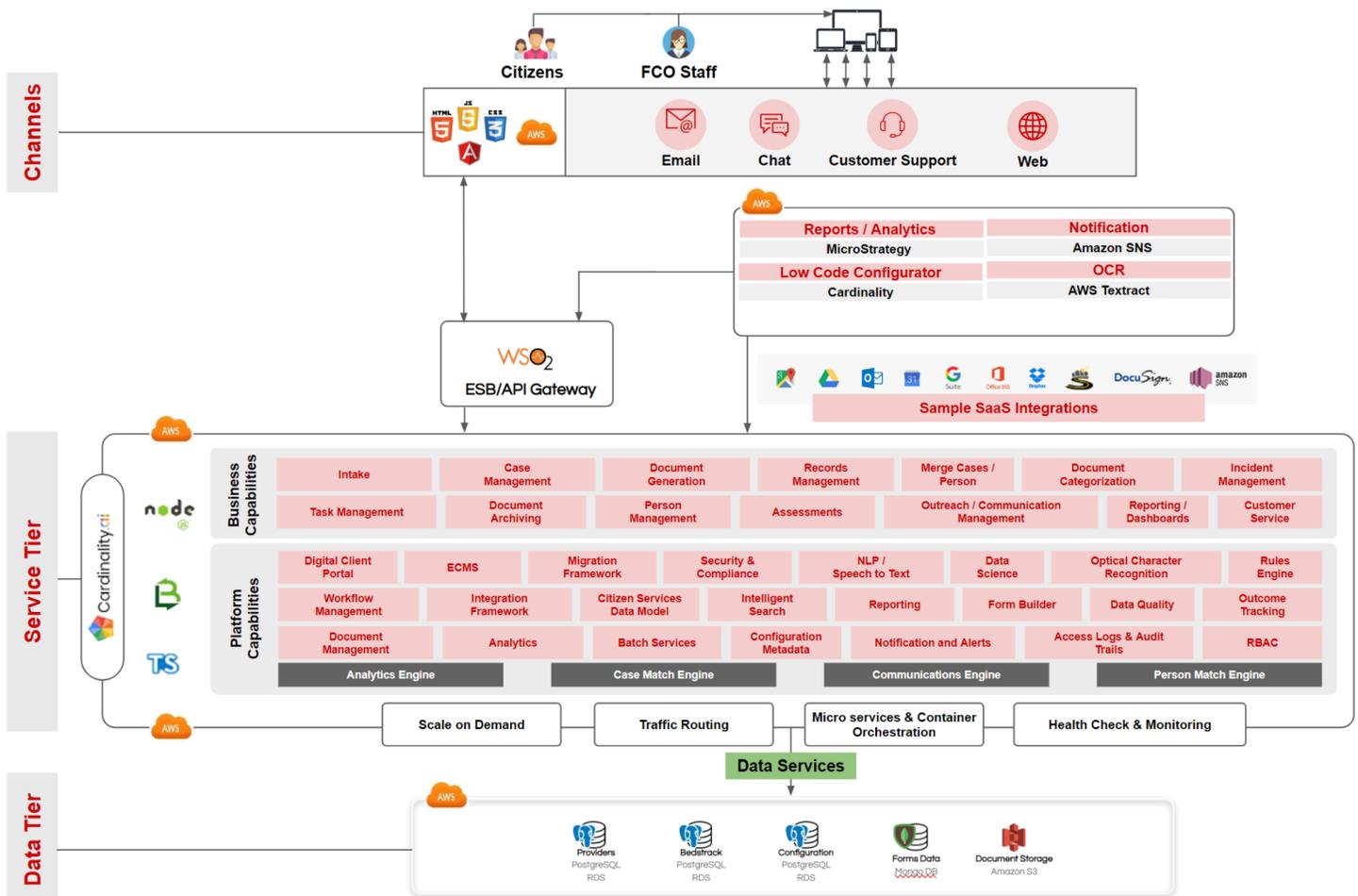
<b>Maryland Department of Human Services                      Eligibility &amp; Enrollment</b>	
<b>Primary Contact</b>	<p><b>Name:</b> Subramanian Muniasamy  <b>Title:</b> Former Executive Director, MD THINK  <b>Current Role:</b> Chief Information Officer, Georgia Office of Commissioner of Insurance and Safety Fire  <b>Phone:</b> +1 603-568-0995  <b>Email:</b> <a href="mailto:smuniasamy@oci.ga.gov">smuniasamy@oci.ga.gov</a></p>
<b>Project Description</b>	<p>Cardinality's Platform and Components like Case Management, Citizen Portal, Eligibility Determination, Form Builder, Document Generation, RBAC, and Microservices/API middleware, procured as part of CJAMS, were also leveraged by other applications such as Eligibility &amp; Enrollment, which is an Integrated Eligibility System for Eligibility Determination &amp; Redetermination for various programs such as Medicaid, SNAP, Cash Assistance, etc.</p> <p>The MD Think initiative was kicked off in 2017 starting with Long Term Care Program modernization and it went live in the fall of 2018. The Integrated Eligibility &amp; Enrollment System initiative which includes programs like Medicaid, SNAP, Cash Assistance (TCA), etc. was kicked off in Jan 2019, and phase-wise rollouts started in Jan 2021 with the full system going live in Nov 2021.</p> <p>Maryland's Eligibility &amp; Enrollment system has contributed to improving the case processing speed &amp; compliance of all programs. Since the system went live, there has been a consistent decline in the percentage of SNAP &amp; Medicaid eligibility applications not processed due to agency delays and has stayed under ~4% monthly average.</p> <p>Additionally, the compliance for SNAP applications has consistently stayed above 95% every month since the new system went live. This system is also supporting the Redetermination process for these programs (Medicaid, SNAP, TCA, etc.) since Dec 2021 and has successfully processed around 200K redetermination applications.</p>

## 5. Proposed Case Management Solution

Cardinality proposes its Case Management System (CMS) to address the FCO's needs in resolving complaints for foster children and parents. Our platform enables the implementation of regulated policies and a unified statewide reporting system, collecting and analyzing complaint data to address challenges faced by foster children and parents.

This system streamlines FCO's handling of Child Welfare matters, including receiving, evaluating, referring, assigning, monitoring, investigating, and reporting on concerns, complaints, and systemic issues. Determination for addressing these matters can come from the FCO or external stakeholders.

Below is a snapshot of the Architecture of Cardinality's Case Management System



**Figure 5.** Case Management System Architecture

It follows a multi-tiered architecture, which is commonly used in user-facing applications. This architecture consists of three layers - Presentation Layer, Business Service Layer, and Data Layer. The Data Layer includes various storage media, such as databases, object stores, caches, and file systems, which hold the data relevant to the application.

**Presentation Layer:** The Presentation Layer is the part that users interact with directly, such as a web page or a mobile app UI. It displays data and accepts user input via keystrokes and mouse gestures and manages application-specific navigation issues.

**Business Service Layer:** The Business Service Layer is responsible for translating user actions at the presentation tier into application behavior. The Service Layer components are the stewards of data and enforce all rules of access and transformation. Integrations with partner systems are performed through WSO2 API Manager and will include exchanges of data in both directions.

**Data Layer:** The Data Layer interacts with data sources through the model APIs and DB connectors built on Node.js and loopback frameworks. These models are an abstraction of physical persistence and connect to multiple data sources or services and enable CRUD capabilities independent of the data source. This layer provides adequate APIs for the application to perform CRUD operations. It can query databases, store data, upload files, send emails, create notifications, and perform other actions provided by data sources and data services. The application uses Postgres and MongoDB as backend systems. Postgres is used to store relational and reporting-related information. MongoDB is used to store and retrieve assessment form templates.

The salient capabilities of our proposed architecture are highlighted below:

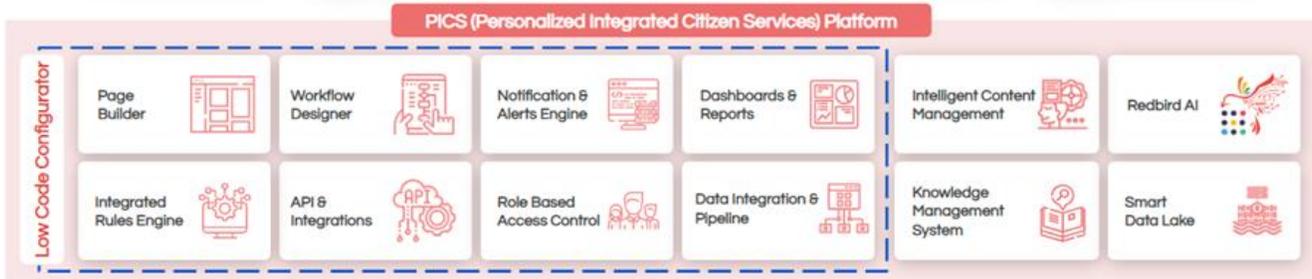
- Offers high performance, flexibility, adaptability, and scalability, to meet changing business requirements and landscape, and to accommodate future project workflows.
- Supports standardization of business processes and workflow requirements
- Uses COTS for the core architecture, including data acquisition, data management, workflow management, application management, and data access.
- Complies with State standards for key architectural principles.
- Ensures that the design is consistent with the overall strategy and goals.
- Encompasses all architectural components, based on proven, engineered techniques.
- Minimizes client (end-user) system requirements through the use of browser-based solutions.
- Separates presentation and business logic leading to a more flexible, scalable, and reusable system.
- Supports the performance requirements for concurrent users, transaction volumes, and response time.
- Uses standards-based architecture and limits the use of proprietary technologies. Maintains end-to-end data integrity.
- Easy to deploy and maintain in the production environment.
- Uses declarative, attribute-oriented programming methods over traditional ones.
- Creates modular, loosely-coupled components and layers.

## 5.1 Streamlined Workflows, Configuration, and Comprehensive Reporting enabled by Cardinality's low-code platform (PICS)

Our CMS solution leverages a utility-grade platform called Personalized Integrated Citizen Services (PICS) to achieve integration and interoperability. PICS is a purpose-built low-code platform that facilitates:

- Sharing data, information & technology across multiple agencies to deliver consistent and enhanced citizen experience.
- Delivery of personalized citizen services, guiding them to positive outcomes using AI.
- Agencies to achieve modernization of legacy systems faster via modular capabilities.

The following image outlines PICS key capabilities that will provide a set of enabling technologies that will allow us to jointly deliver new and improved CMS services to FCO, providers, and staff.



**Figure 6.** Cardinality platforms Low Code Configurator Components

**Page Builder:** Page Builder provides tools for creating reusable page types and components. The tool's drag-and-drop features allow the user to create interactive forms in seconds.

**Workflow Designer:** Helps automate and configure business processes as workflows. Using the workflow designer's drag-and-drop features, we can interconnect every app with an API, and share and manipulate its data without a single line of code.

**Alerts and Notifications:** The portal includes an integrated Alerts and Notifications Module that delivers reminders, application status updates, and other system alerts seamlessly via various channels, including physical mail and electronic communication.

**Analytics & Reporting:** The platform's Analytics & Reporting capabilities powered by MicroStrategy empower users to effortlessly query data, generate reports, and visualize information through a user-friendly interface, enabling a seamless and enriching analytics experience.

**RBAC:** The platform's Role-Based Access Control (RBAC) simplifies permission settings, granting authorized individuals' exclusive access to screens, data editing, and deletion, ensuring confidentiality and enhanced security. RBAC can be conveniently managed through the User Administration/Security console.

**Integrated Rules Engine:** The platform comes with a powerful, easy-to-use business rules engine. Eligibility and Benefits determination is governed by the system's rules engine, which is further enabled for changes in business rules by granting permission to authorized users through the system's robust RBAC Module. This allows the authorized/designated user to easily configure the program rules defined within the rules engine to cater to the agency's specific needs and requirements.

The rules engine integrated with a low code workflow configurator will route the case or case tasks to the appropriate work queue, based on a predefined set of rules. The solution's rules engine can be configured in such a way that the case can be assigned to the county based on address or geographic location. IVR integration also exists as a native capability and can be leveraged to route the caller to the appropriate case workers' queue.

**Smart Data Lake:** Our data warehousing/data lake approach aggregates and validates data from source to distribution. The data lake enables the consolidation of data in one place, in a format that is

easily accessible. With the given complexity and volume of data in the current systems today the data lake approach enables us to access these data sources at run time or in batch and drop them into the data lake for formatting, segmentation, and analysis.

**Redbird AI:** The platform offers with a chatbot assistant driven by our Redbird AI Module that can direct and assist the user with common application queries, downloading application forms, links to pre-screening tools, locating local offices, and furnishing contact information of State offices.

Cardinality's Redbird AI also allows for choosing the right provider. To achieve this, the Redbird AI Module assists the case worker in choosing the placement based on several factors, such as geographic location, the experience of the provider and staff, incidents, race, types of services, ratings, location, and training. Multiple factors are considered by Redbird AI before the appropriate results are displayed.

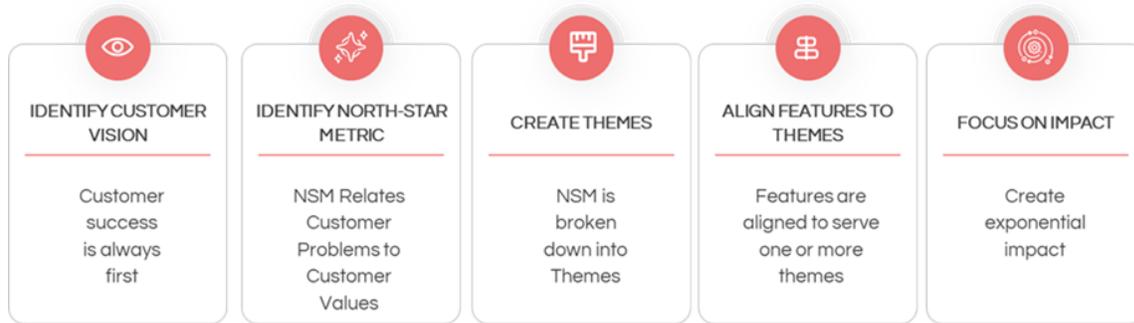
**Intelligent Content Management:** Cardinality's native document management system effectively manages case artifacts, providing document collaboration and content management through the bundled **Enterprise Document Management System (EDMS)**. Leveraging AWS S3, our solution builds a robust, scalable, and cost-effective document management system, which can interface with existing systems through APIs.

With our EDMS, Investigators can easily upload and link scanned documents or media to relevant case records, ensuring centralized organization for easy access. The EDMS supports the entire document life cycle, including creation, distribution, utilization, retention, and disposition. It offers multiple document capture approaches and enterprise-wide storage and retrieval, providing a confident system of record.

Our solution's seamless combination of Document and Case management sets it apart, with documents stored based on type and metadata, allowing Investigators to find what they need through various search strategies.

## 6. Software Upgrades

To provide an efficient and effective CMS solution, our focus is on solving key customer problems rather than just following feature-based cycles. To achieve this, we have adopted a vision-oriented roadmap, instead of the typical feature-based roadmap. Our Continuous Improvement model aligns with critical factors for customer success, as displayed in the figure below.



**Figure 7. Critical Factors for Customer Success**

We recognize that new priorities and legal mandates continually require refinement and updates to the system. In our work with Maryland, the State began working with Federal partners on processes and reporting for the Family First Prevention Services Act. We worked with Maryland's team to define functionality/data elements during the statewide implementation of the new system that aligns with Federal goals. Collaborative change control was used to define the work and quickly implement it in an upcoming sprint.

We will collaborate with DCF to understand your goals and align our solution's maturity to your success. Our vision is divided into measurable North-Star Metrics (NSM) and corresponding themes are formulated. System features are aligned to these themes, aiding prioritization, and adopting an impact/value-driven approach to modernization objectives.

Our Continuous Improvement plan is centered around four key themes that will be customized to align with the overall vision of DCF and enhance program impact.



**Figure 8. Continuous Improvement Plan - Key Themes**

To ensure key stakeholders experience a marked difference, our product roadmap will align with DCF's vision, combining leading North Star Metrics (NSM) and theme-based build-out. Team Cardinality will deliver the solution as proposed by the State in the CCWIS modernization roadmap, as outlined in Appendix B, which will guide our agile processes and ceremonies.

As shown in the table below, our typical modernization/enhancement plans vary during and after the DDI phase. All improvements are managed releases through well-defined CI/CD processes.

Phase	Release type	Frequency
Design, Development & Integration	Theme-driven	Monthly/Quarterly
Post DDI/Go-live	<ul style="list-style-type: none"> <li>● Technology platform</li> <li>● Themes/Feature sets</li> <li>● Performance upgrades</li> <li>● Security updates</li> <li>● Critical patches</li> </ul>	Twice a year (summer and winter)

## 7. Response to Mandatory Requirements

The table below addresses the requirements specified in Section 3 - **General Requirements** of the Specifications mentioned in the RFQ.

Mandatory Requirements	Cardinality Response
<p>3.1.1 Enterprise level, Cloud-Based, statewide case management system which must be compatible with the West Virginia Office of Technology's current operating system, Windows 11.</p>	<p>We offer a modern cloud-agnostic Case Management Solution that can seamlessly operate on AWS or Microsoft Azure. The proposed solution will adhere to and align with the agency's current infrastructure and operating system.</p>
<p>3.1.1.1 System must be modular to allow system upgrades and enhancements, must be scalable for increasing the number of licensed users and to support unlimited persons, cases, contacts, activity transactions, and reports.</p>	<p>Cardinality's modular CMS simplifies enhancements/upgrades through a Continuous Improvement methodology. Our Operations Support Plan provides a structured process to plan, test, and support the configuration of new releases and upgrades to software, COTS components, technology platforms, and infrastructure, with strict version control. Our approach to upgrades is focused on solving key customer problems rather than focusing on feature-centric cycles.</p>
<p>3.1.1.2 System must have administrative ability to create enterprise-wide announcements to be displayed on the user home page, which can be targeted to all users, or specific group users, or specific users. System must enable real time collaboration or access sharing with system users.</p>	<p>The solution is equipped with a 'Broadcast Messaging' feature that enables enterprise-wide communication. The configurable capabilities of this feature allow for broadcasting or displaying messages to specific users, user groups, customers, or clients.</p> <p>The system's robust RBAC capabilities can be leveraged to share or revoke access. Collaborative access and information sharing among users occur in real-time.</p>
<p>3.1.1.3 System must allow for speech to text functionality where applicable, and be accessible from laptops, desktops, and tablets.</p>	<p>Our solution also leverages advanced Natural Language Processing (NLP) capabilities to convert voice to text, so that caseworkers can convert voice dictation to draft case notes. This allows caseworkers to capture maximum details that can be reviewed/updated before submission.</p> <p>The configurable feature seamlessly integrates into any form the caseworker uses. Additionally, the solution's device compatibility extends this feature to phones and tablets, leveraging the device's in-built microphone to deliver this service.</p>

<p>3.1.1.4 System must provide the capability for authorized users to drill down to individual data elements in dashboard reports. System must enable user, manager, and administrative dashboard and reporting tools for performance, workload, task and case status monitoring by case, user, team, and/or enterprise.</p>	<p>The proposed CMS is integrated with data visualization capabilities that are available through the user's Dashboard. The solution's data model segregates and organizes data into specific data elements and appropriate labeling, which enables the user to drill down on every specific data element on the dashboard. It allows the users to get detailed insights into the information presented. Moreover, the system includes a comprehensive dashboard and reporting tools designed for users, managers, and administrators.</p> <p>Our solution will deliver readily available views and parameter-driven dashboards, offering Users/Administrators/ Supervisors an at-a-glance view of the program's performance. These dashboards are interactive, so users can quickly drill down to an appropriate level of detail, facilitating fast and effective decision-making.</p>
<p>3.1.1.5 System must provide a quick search capability based on a single and or an advanced multiple field/filters.</p>	<p>Equipped with a modular Search Engine, the solution enables quick searches using both deterministic and probabilistic searches.</p> <p>The Search functionality produces quick and comprehensive search results, saving users' time, reducing duplicate record/person/client creation, and promoting data quality and integrity. Users will be able to perform searches based on a single field or utilize advanced filters to refine their search criteria.</p> <p>Our Search functionality covers the following criteria:</p> <ul style="list-style-type: none"> <li>● Searches for clients with an exact match to one or more data elements.</li> <li>● Searches for clients with a fuzzy match to one or more data elements.</li> <li>● Searches with partial matches.</li> <li>● Searches for a range of values, where applicable.</li> </ul> <p>The solution generates search results for the search term and its subtle variations, allowing partial matches and producing results so that users can choose accordingly. Its participant searching functionality allows users to quickly locate participant details and includes capabilities for "sounds like" nicknames (Thesaurus-based) and</p>

	<p>wildcard searching to increase the efficiency of searches.</p> <p>The search results will be presented in a clear and organized manner, enabling users to quickly locate the desired cases based on their specific search criteria.</p>
<p>3.1.1.6 System must allow name fields must include capacity to enter and store nicknames, appellations, and suffixes.</p>	<p>Cardinality's Case Management System offers configurability that enables the entry and storage of nicknames in a person's 'other' or 'also known as' fields within the Person Record Profile.</p> <p>With the capability to include titles/ appellations and suffixes in name fields, the solution's configurable nature allows the user to add additional fields to accommodate more names or nicknames of one client/person.</p>
<p>3.1.1.7 System must maintain a chronological and reportable audit trail of activity by user and/or case, including a history of modifications to all data and event logs by record and/or user.</p>	<p>Record Audit is a robust security feature that captures the detailed history of field-level changes made to records, including timestamps, for auditing purposes. It records updates, deletions, and relevant metadata, such as previous and modified values, user IDs, and timestamps.</p> <p>This comprehensive activity log serves as crucial evidence, documenting the sequence of actions performed on agency records. With this feature, Cardinality's Case Management System ensures data integrity, accountability, and transparency, providing a reliable and traceable record of all modifications made within the system.</p>
<p>3.1.1.8 System must allow administrators to add, delete, change, or control user role-based security permissions by users or user group types.</p>	<p>Powered with the Role-based-Access Control, the solution allows administrators to manage user role-based security permissions, including the ability to add, delete, change, and control permissions for individual users or user groups.</p> <p>This flexible and intuitive functionality allows administrators to effectively configure and customize security settings based on specific user roles or group types. This robust permission management capability enhances system administration, user management, and overall security.</p>
<p>3.1.1.9 System must provide access to all applications and user documentation, vendor use, and help tool within a single site. System</p>	<p>The solution is built with context-sensitive help on every screen. The complete documentation on the software and its workings is available in the</p>

<p>must integrate seamlessly with back-office systems including versions of Microsoft Suite and/or Google Docs. System must allow document attachments to be scanned and associated with one or more person/case records, as well as complaints, notes, and other identifiers. System must allow documents to be thumbnail/first page previewed prior to full access.</p>	<p>solution's learning and training module - Virtual Training and Certification System (VTACS).</p> <p>The solution attaches all documents or records in the system to a client or case ID, facilitating easy retrieval. Integrated with the document scan and Optical Character Recognition (OCR) capabilities, the solution is bundled with a custom-built document management system - Enterprise Document Management System (EDMS). The EDMS provides a host of services, such as uploading scanned documents or media, (e.g., pdf, jpg, photos, and video) and linking them to the referenced case record. Similar to other document management systems, like Google Docs or Microsoft SharePoint, it allows for a first page/thumbnail preview of all attached documents.</p> <p>The modular capability of the solution supports integration with Microsoft Office Suite and G-Suite.</p>
<p>3.1.1.10 System must support users and administrators to schedule and prompt future date tasks, activities, calls, and follow ups, and do so with role-based permissions, to other users.</p>	<p>Our solution is embedded with configurable workflows on all business processes, along with capabilities that allow users to set up alerts, tasks, and notifications to complete each milestone in the workflow. The solution, through calendar integrations for scheduling events, enables the process of setting up alerts for task completion for other team members along with routing the task or document for the next team member to progress or approve the task.</p> <p>Its robust RBAC allows the setting of permissions at page and field levels. This facilitates administrators and supervisors to perform their tasks on approvals, assignments, and rejections in the workflow while restricting access to pages or screens for other users and allowing them to pursue the next course of task of action in the process flow.</p>
<p>3.1.1.11 System must allow users to return to using a quick search feature to the three (3) most recently accessed records or activities. System must provide capabilities to determine whether a caller, a person, or case record already exists to avoid duplication. System must provide a means to merge identified duplicate records.</p>	<p>We follow a thorough data deduplication process that validates and promotes data integrity across the system. Beginning with the search engine that returns duplicate records, the solution features a configurable probabilistic matching engine that uses statistical matching patterns, including Soundex search. This technique matches client master data records accurately. The Soundex search also ensures relevant results even if the user input is not exact or complete. When creating</p>

	<p>a new client record, the system performs a duplicate check, flagging any potential duplicates, such as a new record with the same date of birth and social security number as an existing record.</p> <p>Data deduplication is achieved using different combinations of attributes in narrowing down/identifying duplicated records. For example, we can use a combination of 'First Name', 'Last Name', or 'Date Of Birth' to identify duplicate clients. This practice enables mapping golden records back to sources.</p> <p>The solution contains the client merge feature that allows merging a record with a duplicate record in the system. When merging, all details pertaining to a specific record are combined. The solution also maintains a history of various address types like home address, business address, mailing address, etc. Every address has a start and an end date to determine the current address.</p>
<p>3.1.1.12 System must manage essential information in a global record including demographics, telephone numbers, email addresses, county, region, map, links, contacts, notes, documents, file attachments, and associated persons including but not limited to relatives, children, attorneys, and collaterals. System must allow addresses to be United States Postal Service (USPS) validated. System must also allow entry of foreign addresses and characters. System must allow for APO (Military) addresses if individuals are deployed or stationed overseas.</p>	<p>The solution's Person Record Profile is the master or global record for a person that includes all demographics and records pertaining to a specific person. Case records, identity records, telephone numbers, email, details on family, children, attorneys, etc., The Person and Relationship module in the solution is flexible with opportunities to add persons and edit their information through the workflow. While the intake worker collects first-hand information about the person and the relationship, the case worker investigates and enriches this information which the system enables to validate and update.</p> <p>The Person Record Profile consists of multiple tabs which record information on a person's profile, (demographics) health, education, family, employment, military status, life skills, and finance. Our solution uses SmartyStreets and geocoding API for address validation while adding contact information. Our solution can be integrated to use USPS for county verification whenever a user enters a county in the portal.</p>
<p>3.1.1.13 System must allow retention/display of photographic images, audio, and video files in their native format within contact records as needed. System must support documentation</p>	<p>Compatible to ingest, store and display multiple file types, Cardinality's CMS supports the retention and display of multimedia files such as photographic</p>

<p>storage within a case or record, in all common formats including Portable Document Format (PDF), Microsoft Suite, Google Docs, etc. and must be document level searchable.</p>	<p>images, audio, and video files in their original formats within contact records as required.</p> <p>The document manager allows the configuration of file size limits to accept large gigabytes of documents. The solution can store all types of files, including:</p> <ul style="list-style-type: none"> <li>● <b>PDF:</b> Reports, forms, and correspondences are generated as snapshots in Adobe PDF format.</li> <li>● <b>TIF:</b> Fax machines and scanners generate these files. The solution can be configured to interface with the installed document scanners at the agency's office to scan documents directly into the system. Furthermore, it can be expanded to scan provider licenses or documents provided by childcare requestors.</li> <li>● <b>JPG/PNG:</b> The digital photo formats can include photographs of each removed child, as well as photographs taken during the investigation stage of client injuries and home removal circumstances. These can be stored within the system for easy access and reference.</li> <li>● <b>WAV/WMA/AAC:</b> The formats allow the user to record conversations and store them in a secure location.</li> <li>● <b>WMV/M4V:</b> These formats allow the user to capture conversations/activities as video and store the files in a secured location.</li> <li>● <b>Microsoft Office formats:</b> These allow the user to upload various MS formats like .xlsx, .docx, .pptx, etc.</li> </ul> <p>The solution supports the storage of documents within the case/client records.</p>
<p>3.1.1.14 System must provide capability for person and case specific alerts to be set by users, such as status indicators and validation messages, to provide feedback to users when accessing a case or record. System must support full case management workflow enabling labels (i.e., receive complaint, preliminary data collection, investigation, in process, awaiting approval to close, etc.) and time tracking by status, workflow from initial contact to case closure.</p>	<p><b>Alerts and Notifications:</b> Through the solution's rules engine, configuration rules can be set up for notifications, text messages, alerts, and emails based on service/user/activity for custom events. The Notifications and Alerts module offers the ability to notify users in multiple ways (in-app notifications, alerts within web applications, secure messages, emails, text messages, etc.). Workflows can be embedded with the module (E.g., Supervisors getting notified about pending action items). Notifications can be viewed at a glance from the user's dashboard screen. This can be</p>

printed or shared with other authorized users. All system events can be configured to appear as an alert or notification within the application as a secure message, via text messages or email alerts.

**Full Case Management Workflow:** The solution delivers a complete case management workflow right out-of-the-box from Intake to Case Closure.

It facilitates all case management activities, including the development and execution of case plans, through the Case Management module. With respect to workflow and notification management, the solution provides:

- Identification of specific alerts/reminders/ticklers for those tasks that require actions.
- Addition of events to the calendar for better planning.
- Referring actions/tasks cases to other internal units such as investigations or external providers.
- Suggesting next actions based on input (configured through business rules/workflows).

Cardinality's CMS offers a robust and user-friendly business rules engine that provides the flexibility to route work within a process, between various systems, and human-based activities. The rule-based automation enhances the efficiency of routing, approval, and authorization processes. For instance, the rules engine enables timely supervisor approval of a document by automatically redirecting the document to another approver if the first approver fails to handle it within a predetermined time frame.

The workflow engine allows the modification of task ownership without code development activities, which insulates the agency from much of the cost of responding to changing business requirements. Cardinality can create user groups, choose the necessary staff members for these teams, and create workflows based on the case type. Our workflow engine categorizes cases based on priority levels and errors, as different cases may require distinct workflows.

	<p>The workflows can be designed to trigger based on the timing of an event or at a key point during the flow of a case. With our workflow technology, staff can receive automated tasks and appointment reminders, be prompted to complete time-sensitive documentation, and much more.</p>
<p>3.1.1.15 System must support automated or manual assignment of a unique case identifier upon creation of a new case. System must provide a way to navigate a case summary view. System must support correspondence production including letter and email templates, then can be connected to workflows, can be auto populated with case record or person specific data, and can be transmitted and timestamped.</p>	<p><b>Unique Case ID:</b> The solution attaches every piece of information to a case along with a Case ID #. Any and all information that enters the system is attached to a specific field that is related to the client ID, Case ID#, or referral ID #. This enables the caseworker to easily add and attach all information to a case. The solution automatically assigns this unique Case ID, once a case is opened or a person or client is registered in the solution.</p> <p><b>Case Summary:</b> The solution provides a citizen-context view of the case through a case summary. It also provides a case timeline that is an at-a-glance view of the journey of the case. The caseworker can click on the specific milestones in the case timeline and view the actions, documents, and records that were created and added to the case record.</p> <p>The auto-population and pre-population capabilities on any form or record allow completing case record details in a new form or a new workflow without manual entry. All activities of correspondence are time-stamped and every action in the journey of a case is time-stamped along with the name and User ID of the caseworker.</p>
<p>3.1.1.16 System must support the ability to generate correspondence to an individual, a group of individuals with similar characteristics, or to a predefined distribution list. System must support templates as form letters, fill-in form letters, customized form letters, or custom letters using integrated Hyper Text Markup Language (HTML) editor without Microsoft Word. System must support capability to create output in hard copy, paper letters, emails, or Google Docs.</p>	<p>The solution's built-in configurable correspondence engine takes care of all customer notices and demand letters. The correspondence engine can be customized and integrated into various modules to perform specific functions, facilitating prompt communication, and enabling review of case information and reporting changes.</p> <p>Additionally, the solution comes with a configurable Form Builder that allows creating and modifying templates as form letters, fill-in form letters, customized form letters, or custom form letters. The Form Builder is supported through a low/no code drag-and-drop interface that allows saving</p>

	<p>and distributing forms in multiple formats, such as emails, letters, MS Word documents, PDFs, etc.</p>
<p>3.1.1.17 System must support user addition of notes, complaints, inquiries, tasks, calls, and other vital data to person and case records in accordance with role-based security permissions that include view, add, edit, and delete levels of access. System must support role-based case assignment/ownership, task delegation, and case transfer both individually and as a group, to, among, and between users. System must provide for customizable workflows incorporating the steps and statuses already available in the standard workflows and incorporating automatic generation of related tasks.</p>	<p><b>Case Record Data:</b> The CMS empowers caseworkers to add more case-related information, enabling them to make the right decisions on the direction and approach to the case. The CMS is enriched with features that allow the caseworkers to:</p> <ul style="list-style-type: none"> <li>● add notes as narratives.</li> <li>● attach documents of multiple types or formats.</li> <li>● add media (both audio and video)</li> <li>● raise complaints.</li> <li>● alert supervisors through the Alerts &amp; Notifications engine</li> <li>● add tasks.</li> <li>● collaborate with colleagues in real-time through the chat window.</li> </ul> <p>Governed by the solution's RBAC, the agency can control permissions with respect to adding, editing, or deleting case records.</p> <p>Any activity that alters or adds vital data to the case record has a clear validation process built through the solution's workflow. The approvals are configured in the workflow. Additionally, the audit trail records change in case records and documents, along with the User ID and timestamp.</p> <p><b>Case Assignment:</b> Our rules/workflow engine can be configured to determine the pathway of work assignments manually/automatically from supervisors to assignees, based on the unit groups (and county/area) as defined by the agency. The supervisors receive a notification in their inbox as soon as an entry is made in the system. The Supervisor then assigns tasks based on the user's workload or competency as displayed in the Supervisor's dashboard.</p> <p>The solution's rules engine for workload management allows supervisors to change the work if need be. The rules engine can be configured to alert supervisors when a case remains unassigned for a certain period.</p> <p><b>Customizable Workflows:</b> The built-in Workflow Designer simplifies and customizes workflows by incorporating standard steps and statuses, with the added benefit of automatic generation of related</p>

	<p>tasks. Available as a Low/No Code platform on the Admin Console, building and modifying workflows with time and event triggers can be easily done by the business user.</p> <p>The solution's automated workflow capabilities help to trigger subsequent tasks based on specific conditions, such as generating reports, assigning follow-up actions, or initiating further investigations or case actions if necessary.</p>
<p>3.1.1.18 System must allow agency to attach an actual or estimated cost per activity unit to all activities within the workflow to enable estimates of the activity cost of providing complete handling and investigatory services.</p>	<p>The solution's configurability allows it to input a value to every activity in the workflow. This will be based on the decided cost-per-activity as communicated by the agency. It easily allows the business user to add or modify the cost-per-activity unit in the configurable workflow designer.</p>
<p>3.1.1.19 System must include monitoring functionality allowing progress to be monitored and alerts/reminders generated when workflow nears completion or needs approval.</p>	<p>Our CMS is built with a workload management capability that allows the supervisor or administrator to track the progress of work within the team, county, or district.</p> <p>Powered by the solution's dashboard capabilities, the supervisor tracks the progress of tasks based on the alerts set in the workflow. For example - If the caseworker has completed tasks and clicks on the 'task complete' button, which changes the status of the task from 'in progress' to 'complete', the supervisor receives an alert about the task status change. The solution is built to ingest and report this data on the dashboard. The number of completed tasks is displayed in the supervisor's dashboard every day (configurable with days, periods, etc.,) along with a pending list and visualization.</p>
<p>3.1.1.20 System must provide means for administrators to update the look and content of the public facing portal and the administrator created content on associated weblinks.</p>	<p>The solution's public interface portal is configured to suit the preferred look and feel or to the branding guidelines of the agency. The Admin Console of the website allows for changes in color schema, fonts, styles, and extension of pages without large alterations to the wireframe of the portal.</p>

<p>3.1.1.21 System must provide a public facing portal that enables modification of text size and other page appearance qualities to comply with the Americans with Disabilities Act (ADA) standards as well as industry standard login/password requirements. System must provide a customizable web form incorporating a CAPTCHA response test.</p>	<p>With our rich experience in implementing public sector and public (web-based) access systems for the private sector, we have gained extensive knowledge of usability requirements needed for Section 508 and ADA compliance.</p> <p>A uniform look and feel is essential for easy administration and operation of the solution. Our system uses portal templates that can be customized to the State's specific branding requirements. These are rolled out to all screens/pages, thereby ensuring standardization. This allows text size modification and other page appearances to follow the standard branding guidelines and is controlled by the use of Cascading Style Sheet (CSS) files.</p> <p>Our solution's common theme is to integrate functions using sliding panes, eliminating the need for separate screens or pop-ups to display data. This modern user interface concept benefits scheduling or calendaring. Continuous user interfaces allow the user to essentially perform all scheduling-related functions without navigating from the central elements of the screen and losing the context of the function.</p> <p>The system also complies with industry-standard login/password requirements. Additionally, the system offers a customizable web form that incorporates a CAPTCHA response test, enabling organizations to enhance accessibility and security, ensuring compliance with ADA guidelines, and safeguarding user accounts.</p>
<p>3.1.1.22 System must enable administrative development of data field labels, characteristics, and picklists. System must also enable users to search picklists using drop down menus.</p>	<p>The solution is comprehensive and extensive in enabling the administrator to add new fields, checklists, drop-down menus, etc. All of these are facilitated by the Low/No Code configurable Form Builder, through the Admin Console.</p>
<p>3.1.1.23 System must allow automation of business practices of the agency and allow administrators to create workflow within the application. System also allows for users to set a specific list of favorites, such as searches, templates, and contacts. System</p>	<p>The CMS is built to automate repetitive tasks. Our rules/workflow engine can be configured to determine the pathway of work assignments manually/automatically from supervisors to assignees. The automation is both user and system driven. The users will be prompted,</p>

<p>must also provide comprehensive standard reports and graphics, including management reports for operational, performance and outcomes, incorporating conditions highlighting for important variances to targets.</p>	<p>primarily through alerts, to complete actions on the system.</p> <p>It maintains an ongoing record of all actions completed and automatically determines the required next steps, including notice generation or report generation.</p> <p>Right from Business Rules Engine to the auto-population of forms, the solution is designed to reduce manual effort. The automation capabilities give the user more time and power to focus on critical and strategic tasks, ultimately leading to enhanced productivity. The configurable workflows, the alerts and notification capabilities along with the RBAC, enable the State and its staff to quickly move towards their desired goals.</p> <p>The solution's dashboards provide the State with powerful business intelligence tools such as automatic online report generation and distribution, real-time dynamic data manipulation, and filtering, ad hoc output to CSV/text files, advanced geocoding, and configurable grouping, annotations, and aliasing. In-built with financial, operation, and data quality reports.</p> <p>It helps achieve data democratization through Big Data analytics, facilitating data-driven decision-making, while increasing operational efficiency. The on-demand aspects of cloud computing benefit the solution through rapid resource allocation, thereby improving the workflow.</p> <p>The key function of the system is to give stakeholders easy and faster access to quality data and information. The easy-to-understand data models offer direct insights that can be actioned upon, while ensuring compliance with privacy and security norms, as per the State and Federal reporting requirements.</p>
<p>3.1.1.24 System must provide capacity to create and generate comprehensive case reports, pre-formatted, relevant to the review/investigation type, the reader, and level of detail required. System must provide for historical reports to show trends and comparisons between time periods. System must provide for generation and distribution of</p>	<p>Reporting and Analytics form an essential part of Cardinality's CMS. It has a built-in reporting and analytics tool. Additionally, we can also integrate with a business intelligence and reporting tool of the agency's choice. This gives great flexibility to users to extract the required data in the required format while also ensuring that only approved users get access to exported data.</p>

standard and ad-hoc reports at regular intervals as set by users with role-defined permissions. System must provide a library of standard reports supporting common aspects of case management and investigatory practice. System must provide ad hoc report generator for enterprise management, with capacity for ad hoc report criteria to be saved for future reports. System reporting engine must allow report writers to create, publish, schedule, and distribute standard and ad hoc reports in varying formats including graphs and charts.

Below are data analytics-related features of our Reporting module:

- Supports export to all industry-standard file formats for maximum flexibility and ease.
- Exports directly from application containers by using built-in APIs. It is ideal when recurring data exports to an external system are required. In this case, a set of secured APIs can be made available to the external system to pull the on-demand data, in XML, or JSON formats.
- Our unique approach to processing data helps the user organize, clean, and prepare data with lightning speed.
- With our Analysis Workspace, analysts will have the most powerful tools available at a click so they can create and curate reusable projects that are customized to their needs.
- Our Data analytics tools make it easy to comply with strict data privacy regulations.

Integration between any reporting tool and our database will be technically feasible. Hence, the department will have the ability to leverage existing tools and competency to present program data captured in the solution.

#### **Ad-hoc reporting capabilities**

Our Reporting module seamlessly generates real-time reports by various departments of human services. Users can create filters for Continuous Quality Improvement (CQI) and result from indicators based on the case characteristics. Users can also conduct simple queries and fetch data from the system about a local department's clients and service programs.

#### **Real-time reporting capabilities**

Our system's embedded analytics allows real-time reports at the system, division, unit, and individual levels to support supervision and monitoring requirements. The Reporting module is also bundled with pre-built canned/out-of-box reports that can be used as templates for customizing additional reporting requirements. Our advanced charting and analytics capabilities are user-friendly and can be easily configured to suit the specific needs of the user.

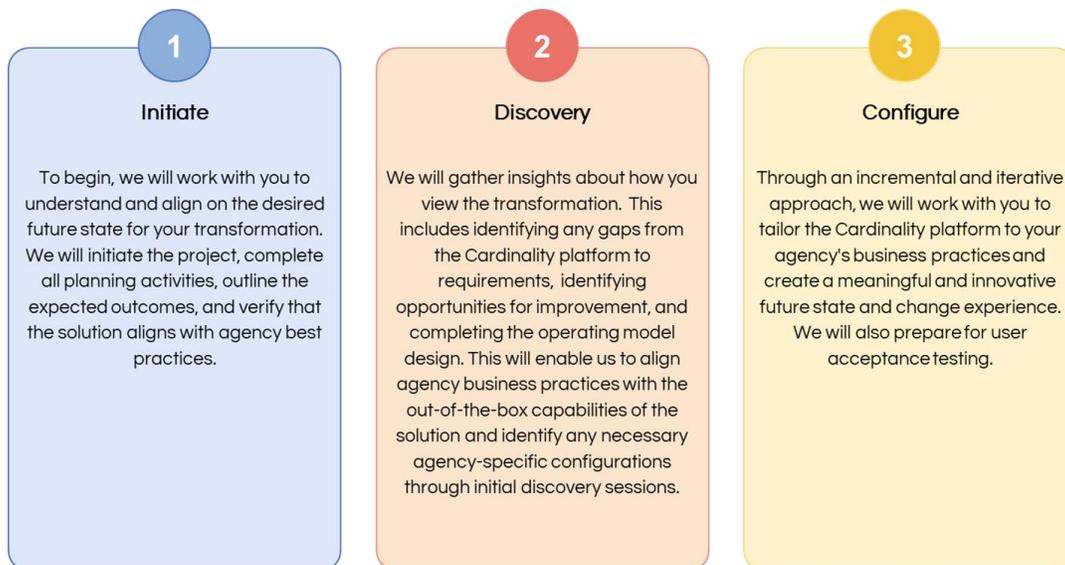
	<p>The system reports can be saved in various formats like .pdf, .doc, .rtf, .html, etc., and can be printed in different languages.</p>
<p>3.1.1.25 System upgrades, enhancements, and error corrections must be at no additional cost/charge when such upgrades, enhancements, and error corrections are generally made available to its other clients of similar systems at no additional cost/charge.</p>	<p>We align with the agency's policies on upgrades and enhancements, and we will provide a detailed schedule for the same.</p>
<p>3.1.1.26 System must enable a public facing web form and a public use email to integrate and populate, as specified by the administrator, to contact, person, or case records to avoid duplication of data entry.</p>	<p>Our solution has auto-populated (controlled by user access), pre-defined, or configurable fields, providing all the required data. It uses field-to-field mapping, similar to reference processes, to enable auto-population of the person record with details from the web form.</p>

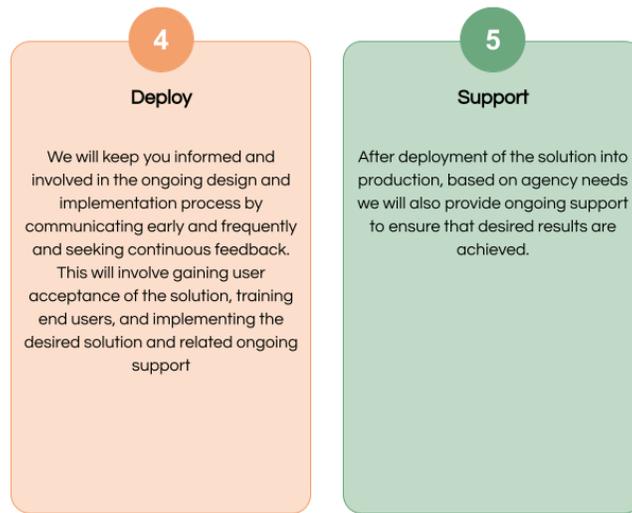
## 8. Implementation Methodology

Our technical teams and project leadership have experience in a variety of delivery environments from purely agile models through traditional waterfall and deliverable-based settings. We are proposing a “hybrid agile” approach to the implementation where tasks and deliverables by phases are delivered incrementally in sprints. Based on our delivery experience, we believe frequent system demonstrations allow us to collect feedback quickly and affirm that the system is meeting requirements, i.e., we’re on track. Regular engagement with the new system via demos and hands-on testing fosters collaboration and builds expertise in the State’s core team very early in the project lifecycle. While we want to demonstrate progress at least monthly with each sprint’s completion, we are proposing five overall project phases with associated milestones and deliverables. A project plan will be maintained with estimated dates, work planned, and managed through sprints with FCO’s input.

Given that our solution is a SaaS product already deployed in other states and capable of meeting most of your requirements out-of-the-box, our approach will focus on swiftly configuring the solution to cater to your specific needs. The GAP design sessions, occurring during the Discover Phase, will be critical to project success and FCO will need to ensure that all the appropriate stakeholders attend those sessions.

As outlined in the figure below, our implementation methodology consists of five distinct phases: Initiate, Discover, Configure, Deploy, and Support. Each phase is characterized by specific objectives, activities, deliverables, and work products, all with the goal of delivering a Foster Care Case Management solution that enhances outcomes for the foster children and foster parents under your purview.





**Figure 9.** Our Implementation Methodology

### Initiate Phase

As part of the Initiate Phase, we will collaborate with your team to clarify and align on the desired future vision for your transformation. During the Initiate phase, which will last for 2 months, we will launch the project, establish project governance, create management plans, and define target outcomes, for the case management solution.

During this phase, we will focus on building engagement among team members. We will collaborate closely with the FCO's project manager and key business process owners to ensure project objectives are clear, communication channels are identified, and decisions made by the project delivery team are approved.

The figure below summarizes the key objectives, activities, and deliverables for the Initiate Phase:

INITIATE PHASE		
Objectives	Activities	Deliverables
<ul style="list-style-type: none"> <li>• Initiate the project</li> <li>• Set up the project management office</li> <li>• Define the program outcomes</li> <li>• Prepare for the discover phase</li> </ul>	<ul style="list-style-type: none"> <li>• Hold a project kickoff meeting</li> <li>• Create a project management plan</li> <li>• Determine the outcomes</li> <li>• Set up the project environments</li> <li>• Conduct initial discovery sessions</li> <li>• Develop a Master Schedule</li> <li>• Facilitate a Design Thinking Alignment Workshop</li> <li>• Verify the user interviews</li> </ul>	<ul style="list-style-type: none"> <li>• Project Management Plan</li> <li>• System Implementation Plan</li> <li>• Communications Plan</li> <li>• Risk Management Plan</li> <li>• Change Management Plan</li> <li>• Design Thinking Alignment Workshop Summary</li> </ul>

**Figure 10.** Initiate Phase Summary

## Discover Phase

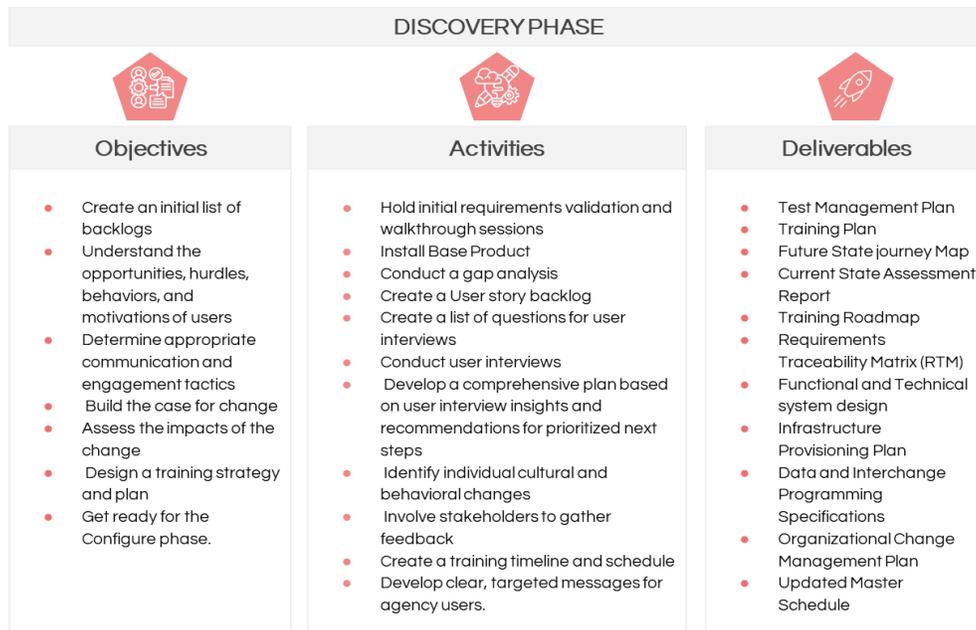
The Discover Phase, which will last approximately 2 months, is focused on refining the desired solution that was confirmed in the previous phase in more detail. During this phase, the focus is on aligning the agency's business practices with the out-of-the-box capabilities of the solution, by identifying any agency-specific configurations. This goal is achieved through Gap Design/Requirements Walkthrough sessions. These collaborative working sessions, led by Cardinality, enable a more in-depth gap analysis based on a comprehensive understanding of the agency's workflows and systems. This process will pinpoint the initial set of configurations and customizations (if needed) required to address any requirements that are not fully met by the out-of-the-box functionality. These adaptations may encompass configurations within the product itself, as well as supplementary functionalities such as data exchanges, technical requirements, and data migration. The identified "gaps" will serve as the foundation for the initial set of user stories in the backlog for the early Program Increments. Cardinality structures the software development life cycle (SDLC) in the form of Program Increments (PI), which consist of 6 sprints, each lasting 4 weeks.

At the beginning of each Program Increment (PI), we will allocate resources and estimate the number of points each resource can handle. For instance, one resource working for two weeks equates to 10 points. In a typical PI, each resource can handle approximately 50 points. With this allocation in mind, we proceed to create user stories. All resources are responsible for tracking their time spent on the stories assigned to them and updating the hours burned for each task. Stories are loaded at the start of each sprint, and a demo is conducted at the end of the sprint.

In conjunction with the working sessions, our Change Management/Training team members will conduct user interviews with members of the agency team to gain a deeper understanding of their needs and expectations for the solution. These interviews will help align the initial set of configurations and also provide valuable insights into potential cultural and behavioral changes that may arise from implementing the new solution. This insight will inform the development of an early training strategy and influence communications planning and execution.

It's important to note that the discovery process continues throughout the Configuration Phase, rather than being limited to the beginning of the project as seen in traditional waterfall projects. The initial discovery effort aims to survey the entire project scope and facilitate a smooth onboarding process for the Cardinality team. This approach allows us to gain a comprehensive understanding of the department's challenges, opportunities, concerns, and pain points from various perspectives, including management, field staff, and back-office staff. Ongoing discovery will occur at the start of subsequent program increments during the Configure phase.

The figure below provides a summary of the key objectives, activities, and deliverables for the Discover Phase:



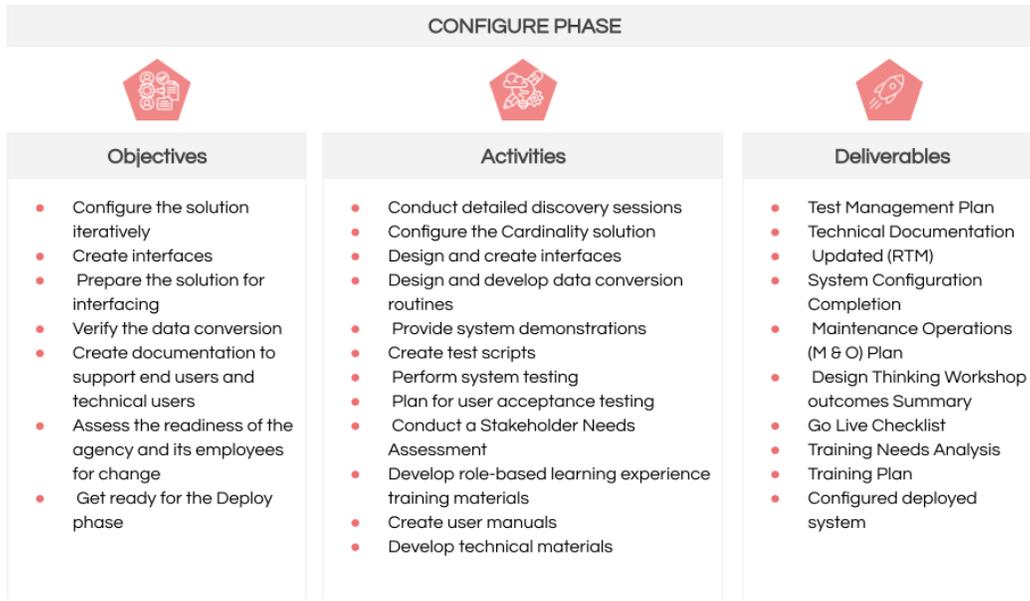
**Figure 11. Discover Phase Summary**

### Configure Phase

During the Configure Phase, which is expected to last approximately 6 months, the solution will be configured based on the User Stories backlog created in the Discover Phase. This phase will involve a hybrid agile-driven, incremental, and iterative approach, with the team breaking the project down into Program Increments, described above, and continuously delivering them in 4-week sprint cycles. Each sprint will be followed by a demonstration of production-ready software that adds value to the user and shortens the feedback loop. Once approved, the team will deploy the actual software to a testing environment. This will give agency members of the project team the opportunity to have hands-on experience with the solution throughout the project. Data conversion is an important part of this phase, where the data is migrated from the source database to the target database.

During the Configure Phase, the sprint teams will also work to configure the products, build data exchanges, align technical components, develop the data migration process, perform unit testing and system testing, and prepare for user acceptance testing. The configured solution and environments, along with the technical documentation, will provide the foundation for user acceptance testing and deployment. Organizational change management, Maintenance & Operations plan, training, learning deliverables, and work products will be critical for stakeholder adoption and will be used in the Deploy phase. During this phase, we will also complete security, performance, and integration testing.

The figure below summarizes the key objectives, activities, and deliverables for the Configure Phase:



**Figure 12. Configure Phase Summary**

## Deploy Phase

The purpose of the Deploy Phase is to gain user acceptance of the solution, provide end-user training, implement the target operating model, and prepare for ongoing business support. We will prepare agency users for the changes they will encounter and enable them to make data-driven, leadership-aligned decisions through new ways of working. To accomplish this, the Cardinality and agency teams will finalize preparations for user acceptance testing and customize training materials for agency users. Our in-person training will be supplemented by blended learning experience to support the adoption of the new solution. We will also develop and deliver a train-the-trainer program for the Agency. This program will cover facilitation skills, module content, and "teach backs" to help trainers become proficient with the material. We will use training metrics to ensure that agency users are prepared to use the solution from the start.

During this phase, we will update and validate the Requirements Traceability Matrix in preparation for User Acceptance Testing. Final data cleanup, validation, and mock conversion runs will be carried out to ensure synchronization with the agency's system of record.

The Deploy Phase will also include Go-Live activities, which both Cardinality and the Agency will be tasked to complete. A Go-Live checklist will be drafted during the Initiate and Discover stages and finalized during the Configure Phase to ensure readiness for the cutover. Finalized training materials, end-user documentation, and maintenance and operations documentation will also be delivered and will serve as key inputs for the Support Phase.

The figure below summarizes the key objectives, activities, and deliverables for the Deploy Phase:

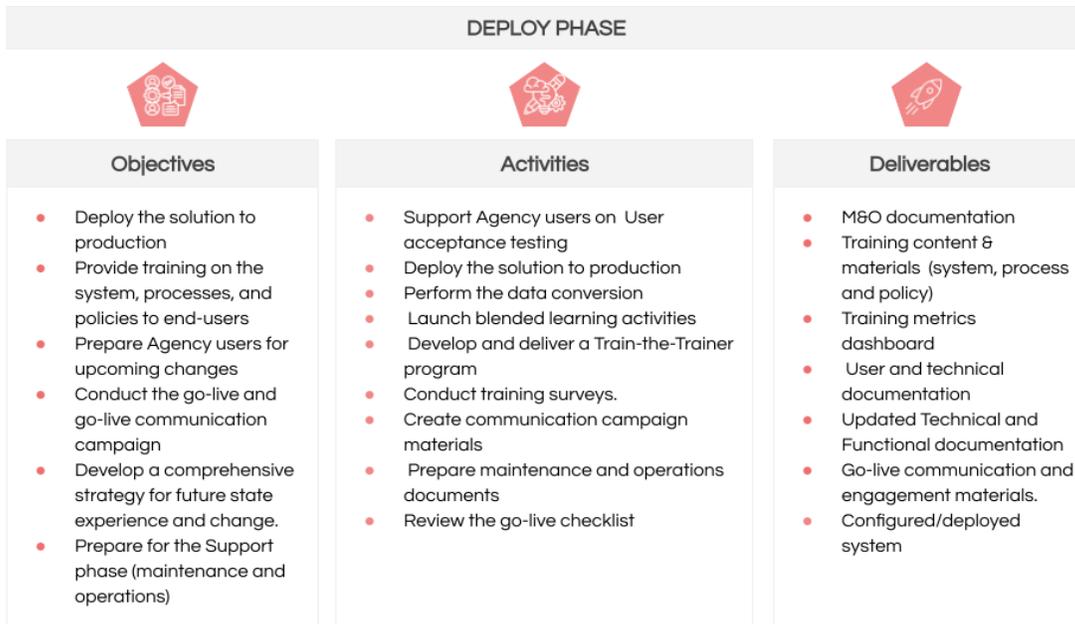


Figure 13. Deploy Phase Summary

### Support Phase

The main objective of the Support Phase is to provide maintenance and operations (M&O), support for the system. If our team is chosen for M&O, we will provide post-go-live support and maintain and operate the system. This will involve adhering to the maintenance and operations plan that outlines the steps and procedures for operating the system, standard service-level agreements for system performance, issue resolution, as well as establishing a change management process. If the agency wishes to support the system using their internal staff, then we will provide detailed knowledge transfer of the system. At the end of this phase, the team will fully transition post-production support to the State's production support staff.

The figure below summarizes the key objectives, activities, and deliverables for the Support Phase:

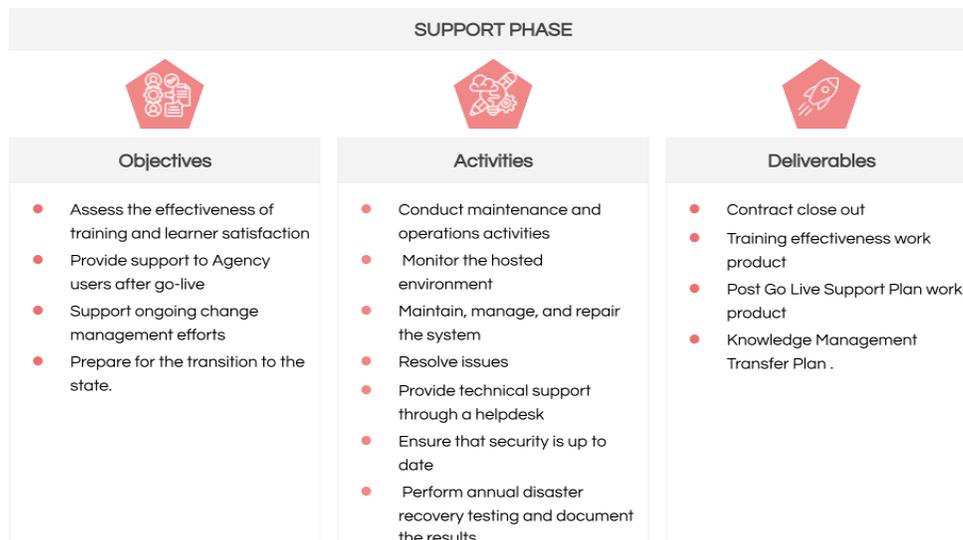
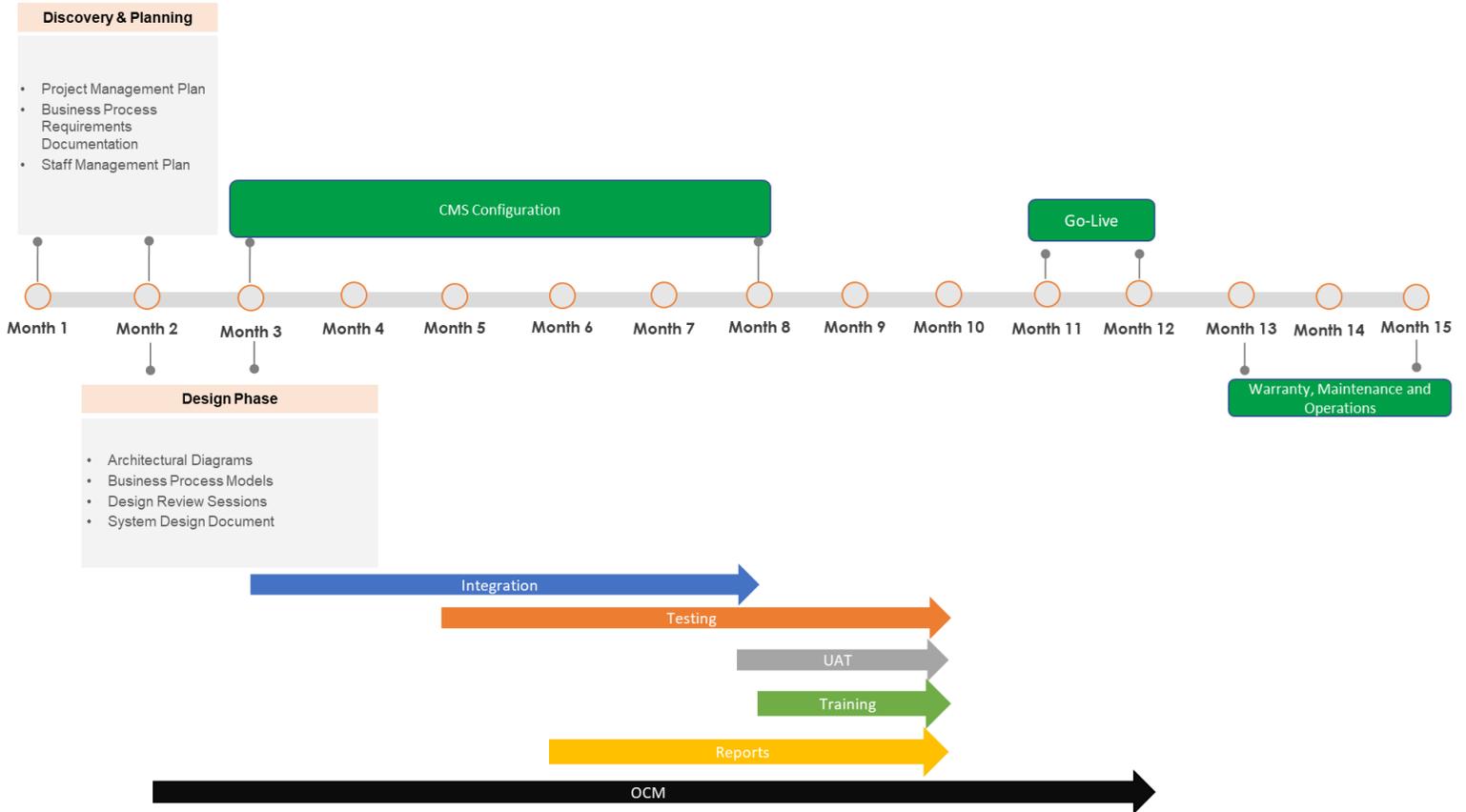


Figure 14. Support Phase Summary

## 8.1 Proposed Implementation Timeline

The proposed implementation timeline is depicted in the figure below. The total timeframe for implementing the Case Management solution is estimated at 12 Months.



**Figure 15.** Proposed Implementation Timeline

## 9. Project Management Approach

Our Project Management (PM) methodology is designed to support all project requirements and logically lead to the deliverables specified in the Request for Quotation (RFQ). The methodology is based on the Project Management Body of Knowledge (PMBOK®), which is a widely recognized standard in project management. By leveraging our knowledge and experience gained from previous projects, we have developed a hybrid approach combining Agile parallel processes, ensuring a flexible and efficient project management framework. This approach allows us to adapt to changing project requirements while maintaining a focus on the deliverables specified in the Request for Quotation (RFQ), ultimately increasing the likelihood of successful project outcomes.

The Hybrid Agile PM methodology we follow allows for client involvement throughout the project lifecycle. This approach combines proactive and adaptive techniques, ensuring that projects are successful, and clients are satisfied. The methodology emphasizes iterative development, regular feedback, and continuous improvement.

In terms of project management planning, Cardinality recognizes the central importance of a Project Management Plan (PMP) in project success. At the start of each engagement, we create a comprehensive PMP that incorporates the elements requested in the RFQ and other important items based on our previous experiences and industry-leading practices such as PMBOK. We understand that projects are dynamic and subject to change. Therefore, our PMP employs a hybrid agile approach, allowing for necessary adjustments throughout the project. Our model expects change and adapts accordingly, ensuring that the PMP remains relevant and valuable instead of becoming a static document over time. The PMP is constantly evolving through checkpoint reviews, validating its compliance with the project direction and activities.

As part of our collaborative approach, we will work closely with FCO staff to develop the Project Plan and ensure that it aligns with the State's project plans. This includes building the Work Breakdown Structure (WBS) to establish project milestones and activities. Through bottom-up methodology, we will engage FCO stakeholders to outline WBS activities and identify the necessary resources for task completion. This collaborative effort ensures that the WBS is realistic and accurately reflects the work to be performed.

Cardinality's PM methodology includes structured processes for managing risks, communications, and other important aspects of the engagement. These processes ensure that potential risks are identified, analyzed, and mitigated effectively. Communication channels are established and maintained to facilitate timely and accurate information exchange. We are committed to aligning our project management plan with the state's project management plan, acknowledging the need for integration and updates as required.

Furthermore, Cardinality emphasizes the utilization of project management tools that can integrate seamlessly with the state's project management tools. This ensures efficient and effective collaboration between the project teams and facilitates the sharing of project-related information. We have extensive experience in utilizing various project management tools, and we are prepared to leverage compatible tools that align with the state's requirements.

Finally, Cardinality's project management methodology conducts activities in parallel to ensure milestones for the project are met. By utilizing Agile parallel processes, we can execute multiple project activities concurrently, allowing for greater efficiency and timely delivery. This approach enables us to manage complex projects effectively while maintaining a focus on meeting important milestones and project objectives, structured processes for managing risks, communications, and other aspects of the engagement.

The key aspects of our Project Management methodology are illustrated in the following figure:

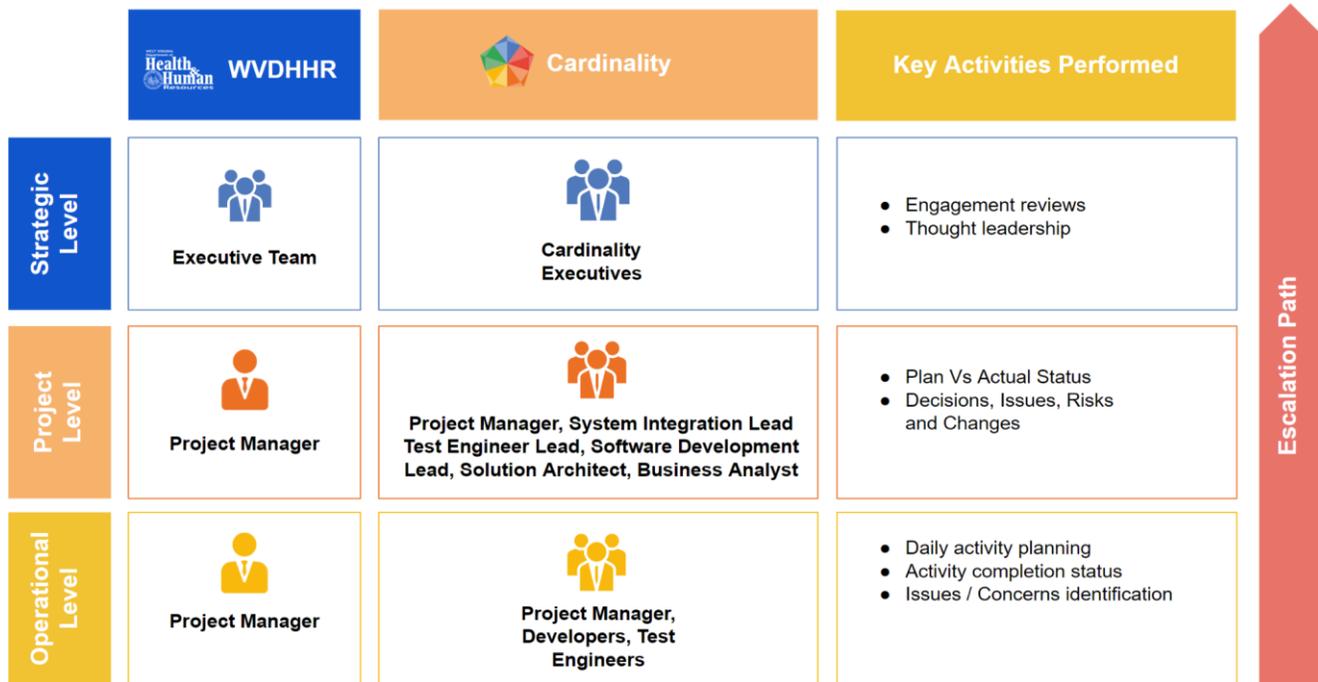


**Figure 16. Project Management Plan**

## 9.1 Project Governance

Cardinality has established a governance framework to support a lasting partnership with FCO. This framework includes customizable processes to meet the FCO's specific requirements, as well as clear communication channels, defined roles and responsibilities, and a shared understanding of accountability to minimize risks and prevent problems.

Cardinality's governance structure is characterized by a three-level mechanism with periodic project reviews to maintain a high level of transparency and responsiveness with the agency. The figure below illustrates this governance model.



**Figure 17. Governance Model**

**Operational Level:** This is a daily standup meeting for the development team, which covers the following topics:

- Status of completed tasks.
- Tasks planned for the day.
- Identification and resolution of impediments.

**Project Level:** This level of escalation includes the Project Managers and Technical Leads from both FCO and Cardinality. The main objective of this level is to monitor the status of the program through progress, issues, and risks, and identify areas for improvement. The agenda for this level includes:

- Review of plan versus actual progress.
- Addressing issues escalated to this level.
- Review of identified risks for the program, along with their mitigation and contingency plans.

**Strategic Level:** This level is composed of senior management from both CSSD and Cardinality. The agenda for this level includes:

- Reviewing progress to ensure that the Agency's business goals are being met, and recommendation of improvement actions as needed.
- Resolution of strategic/escalated issues escalated to this level.
- Reviewing program risks, along with mitigation and contingency actions.

## Addendum Acknowledgement

We hereby acknowledge the receipt of the addendum document, Addendum 1 dated 9th June 2022. Find below signed acknowledgement addendum form.

**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: MIS2300000003**

**Instructions:** Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

**Addendum Numbers Received:**

(Check the box next to each addendum received)

<input checked="" type="checkbox"/> Addendum No. 1	<input type="checkbox"/> Addendum No. 6
<input type="checkbox"/> Addendum No. 2	<input type="checkbox"/> Addendum No. 7
<input type="checkbox"/> Addendum No. 3	<input type="checkbox"/> Addendum No. 8
<input type="checkbox"/> Addendum No. 4	<input type="checkbox"/> Addendum No. 9
<input type="checkbox"/> Addendum No. 5	<input type="checkbox"/> Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Elixir Lab USA Inc (d/b/a Cardinality.ai)

Company

*Kevin Jones*

Authorized Signature

06/29/2023

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.  
Revised 6/8/2012