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SECTION 1  PURPOSE AND BACKGROUND

1.1  PURPOSE OF ANALYSIS

The Department of Elder Affairs (DOEA) selected Strategic IT Alignment Group (Team) to complete a Market Analysis of DOEA's options for a modern enterprise client registration and tracking solution to replace the current Client Information and Registration Tracking System (CIRTS), and address the increased demand from constituents, with an increasingly smaller workforce.

It is important to note, as a result of this analysis, the next step in the process is for DOEA to submit a Schedule IV-B to the Legislature. A Schedule IV-B is required to be submitted with any Legislative Budget Request (LBR) for any Governor's Agency IT project with a total lifecycle cost more than $1 million.

1.2  DOEA BACKGROUND

DOEA was created in 1991 through the enactment of the “Department of Elderly Affairs Act” (Chapter 430, Florida Statutes). Since 1992, DOEA mission has been successfully serving and advocating for elder Floridians serving as the primary state agency for administering human services programs for elders and developing policy recommendations for long-term care.

Florida is home to nearly 5.2 million residents age 60 and older and currently ranks first in the nation for the population of 65 years or older. As the senior population continues to increase, Florida's future is linked to the financial, health, and physical security of the elder population.

DOEA provides services through its Division of Statewide Community-Based Services, which works through the state’s eleven Area Agencies on Aging (AAAs)/Aging and Disability Resource Centers (ADRCs) (AAA/ADRC), Lead Agencies, and local service providers. DOEA also administers a wide range of programs, ranging from the Long-Term Care Ombudsman Program (LTCOP), Office of Public and Professional Guardians, Communities for a Lifetime, SHINE (Serving Health Insurance Needs of Elders), and CARES (Comprehensive Assessment and Review for Long-Term Care Services).

DOEA recognizes individuals age differently; therefore, the state's residents do not each need the same kind of care or services as others of similar age. Some individuals may suffer from chronic conditions beginning long before they reach age 60, while others may be able to live their entire lives without ever needing long-term medical or social services. One of DOEA's highest priorities is reducing the need for many elders to be placed in nursing homes and other long-term care facilities.

Ultimately, the goal is to use DOEA resources efficiently and effectively to help ensure the greatest possible number of elders and persons with disabilities get to spend their golden years living healthy, active, and fulfilling lives in their communities.
The following Offices, Divisions, and Bureaus residing under the Office of the Secretary comprise DOEA resources required to carry out this directive:

<table>
<thead>
<tr>
<th>OFFICES/DIVISIONS</th>
<th>BUREAUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Division of Financial and Support Services</td>
<td>Accounting and Contract Payment</td>
</tr>
<tr>
<td></td>
<td>Budget Office</td>
</tr>
<tr>
<td></td>
<td>Bureau of Information Systems</td>
</tr>
<tr>
<td></td>
<td>Contract Administration and Purchasing Unit</td>
</tr>
<tr>
<td></td>
<td>General Services Unit</td>
</tr>
<tr>
<td></td>
<td>Monitoring and Quality Assurance (MQA) Unit</td>
</tr>
<tr>
<td></td>
<td>Office of Supplier Diversity</td>
</tr>
<tr>
<td></td>
<td>Revenue Management Unit</td>
</tr>
<tr>
<td>Division of Statewide Community-Based</td>
<td>Bureau of Comprehensive Assessment and Review for Long-Term Care Services (CARES)</td>
</tr>
<tr>
<td>Services</td>
<td>Bureau of Long-Term Care and Support</td>
</tr>
<tr>
<td></td>
<td>Bureau of Community and Support Services</td>
</tr>
<tr>
<td>Division of Internal and External Affairs</td>
<td>Office of Communications</td>
</tr>
<tr>
<td></td>
<td>Office of Legislative Affairs</td>
</tr>
<tr>
<td>Office of Strategic Initiatives</td>
<td>Bureau of Planning and Evaluation</td>
</tr>
<tr>
<td>Office of the General Counsel</td>
<td>N/A</td>
</tr>
<tr>
<td>Office of the Inspector General</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Exhibit 1: DOEA Offices, Divisions, and Bureaus**

**1.3 DOEA’S PRIMARY RESPONSIBILITIES**

Per Section 430.04, Florida Statutes, DOEA’s primary responsibilities and functions include:

1. Administering human services and long-term care programs, including programs funded under the federal Older Americans Act of 1965, as amended, and other programs that are assigned to DOEA by law.
2. Ensuring each AAA/ADRC operates in a manner that provides Florida elders with the best services possible.
3. Serving as an information clearinghouse at the state level and assisting local-level information and referral resources as a repository and means for the dissemination of information regarding all federal, state, and local resources for assistance to the elderly in the areas of, but not limited to, health, social welfare, long-term care, protective services, consumer protection, education and training, housing, employment, recreation, transportation, insurance, and retirement.
4. Recommending guidelines for the development of roles for state agencies that provide services for the aging, reviewing plans of agencies that provide such services, and relaying the plans to the Governor and the Legislature.
5. Recommending to the Governor and the Legislature an organizational Framework for the planning, coordination, implementation, and evaluation of programs related to aging, with the purpose of expanding and improving programs and opportunities available to the state’s elderly population and enhancing a continuum of long-term care.

6. Advising the Governor and the Legislature regarding the need for and location of programs related to aging.

7. Reviewing and coordinating aging research plans of all state agencies to ensure research objectives address issues and needs of the state’s elderly population. This effort includes contracts with academic institutions, development of educational and training curricula, Alzheimer's disease and other medical research, studies of long-term care and other personal assistance needs, and design of adaptive or modified living environments.

8. Reviewing budget requests for programs related to aging to ensure the most cost-effective use of state funding for the state’s elderly population before submission to the Governor and the Legislature.

9. Requesting administering programs affecting the state’s elderly population to amend their plans, rules, policies, and research objectives as necessary to ensure that programs and other initiatives are coordinated and maximize the state’s efforts to address the needs of the elderly.

10. Holding public meetings regularly throughout the state to receive information and maximize the visibility of important issues relating to aging and the elderly.

11. Conducting policy analysis and program evaluation studies assigned by the Legislature.

12. Assisting the Governor, each Cabinet member, and members of the Legislature in conducting their responsibilities as they consider appropriate.

13. Calling upon appropriate agencies of state government for such assistance as is needed in the discharge of its duties.

14. Responsible for establishing and administering the Adult Care Food Program.

SECTION 2  STRATEGIC GOALS, OBJECTIVES, AND PRIORITIES

2.1  DOEA TOP PRIORITIES FIVE-YEAR OUTLOOK

DOEA understands the value of strategic insight into the trends, conditions, and challenges that may impact DOEA in the future. The DOEA priorities for the next five years are outlined in the bullets below:

- Provide home and community-based services for elders and their caregivers to ensure elders can choose to remain safely in their homes and communities;
- Increase awareness of the positive impact elders have on Florida’s economy and communities;
- Ensure federal and state funds are used to serve elders’ needs effectively and efficiently;
- Prepare for future elder needs through planning, collaboration, and policy development;
- Provide information empowering elders, adults with disabilities, caregivers, and their families to make informed decisions about long-term care options;
- Empower elders to stay active and healthy and improve their physical and mental health;
- Advocate for the protection of elder rights through education and collaboration;
- Strengthen the state’s ability to prevent elder abuse, neglect, and exploitation;
Work with the aging network and state agencies to plan for, respond to, and educate elders about hurricanes and other disasters; and

Expand workforce development options to improve employee retention.

These priorities are critical to the continued success of DOEA and, as a result, there is now an ever-present need for increased efficiencies across all the Divisions by leveraging new technologies to further improve DOEA’s service functions to better serve its clients. To address and support these priorities, DOEA must optimize its processes across all its Divisions, Offices, and Bureaus to gain necessary efficiencies via the implementation of an enterprise Client Information and Registration Tracking System (CIRTS).

2.2 DOEA ORGANIZATIONAL STRATEGIC GOALS AND OBJECTIVES

DOEA drafted its Long-Range Program Plan in September 2016 outlining its priorities by setting the goals and objectives needed to fulfill DOEA’s mission. These initiatives include:

Goals:

- **Goal 1**: Enable older Floridians, individuals with disabilities, their families, and other consumers to choose and easily access options for existing mental and physical health, as well as long-term and end-of-life care;
- **Goal 2**: Provide home and community-based services to enable individuals to maintain the highest level of independence for as long as possible, including supports for family caregivers;
- **Goal 3**: Empower older people, individuals with disabilities, and their caregivers to live active, healthy lives to improve their overall health status;
- **Goal 4**: Ensure the legal rights of older Floridians are protected and prevent their abuse, neglect, and exploitation;
- **Goal 5**: Promote planning and collaboration at the community level that recognize the benefits and needs of its aging population; and
- **Goal 6**: Maintain effective and responsive management.

Objectives:

- **Objective 1.1**: Increase streamlined access to health and long-term care options;
- **Objective 2.1**: Identify and serve target populations in need of home and community-based services;
- **Objective 2.2**: Address unmet needs while serving as many clients as possible using all available resources;
- **Objective 2.3**: Improve caregiver supports and services;
- **Objective 3.1**: Promote good nutrition and physical activity to encourage or maintain healthy lifestyles and mitigate negative health outcomes;
- **Objective 4.1**: Increase the accountability and oversight of individuals serving as professional guardians;
- **Objective 4.2**: Increase the advocacy for residents of long-term care facilities through the Long-Term Care Ombudsman Program;
- **Objective 5.1:** Promote safe and affordable communities for elders that will benefit people of all ages; and
- **Objective 6.1:** Maximize the effective and efficient use of federal and state funds.

### 2.3 Solution Goals

In addition to discussions with DOEA Offices, Divisions, Bureau of Information Systems, AAAs, ADRCs, as well as meetings with key executive staff, a list of solution goals were defined to support DOEA’s priorities, goals, and objectives. A summary of these solution goals is described below:

1. Enhance overall DOEA staff efficiency and effectiveness with applicable technology tools.
2. Optimize and standardize key business processes to improve operational efficiencies.
3. Reduce manual tasks for DOEA, AAA, ADRC and Lead Agency staff resulting in greater efficiency and faster response to client needs.
4. Enhance intra and interdepartmental workflow functionality allowing DOEA staff to provide services faster with greater efficiency.
5. Increase data integrity, standardization, and security toward improved accuracy, operational efficiency, monitoring, reporting, and analytics.
6. Use technology to increase communication channels and collaboration between DOEA CARES AAAs, ADRCs, and Lead Agencies which increases the efficiency of the intake and referral, assessment, staffing, monitoring, and compliance processes across DOEA.
7. Enhance mobile capabilities including remote data capture, scheduling, and GPS route planning support.
8. Improve analytical and reporting capabilities providing DOEA leadership the tools to plan resource allotments and operational efficiencies tactically and strategically across DOEA thereby increasing efficiencies and reducing operational costs.

### 2.4 Challenges to Meeting Goals and Objectives

Impeding DOEA’s ability to meet a significant portion of their goals and objectives are the current realities of a reliance on a preponderance of manual processes as well as antiquated technologies, design methodologies, and interfaces. In addition, there are differing processes and associated data sets unique to Divisions, AAAs/ADRCs, and Lead Agencies operating without centralized, enterprise standardization. This environment produces non-uniform, inefficient processes resulting in redundant, non-standard data across the Divisions, creating a challenging environment to effectively collaborate and communicate information throughout DOEA.

Overlying these current systems issues, DOEA has also identified four key strategic challenges:

1. The proliferation of inefficient and redundant processes (manual and automated), along with the disparate supporting systems, databases, and spreadsheets, exposes DOEA to operational challenges which increases administrative and support costs, while decreasing its operational efficiency and effectiveness.
2. The existing systems are lacking efficient functionality available in current technologies and are not meeting the changing needs and demands of staff and clients. This is primarily due to outdated, unsupported, and difficult to modify, enhance, and maintain technologies.
3. From an external perspective, legislative changes (State and Federal) require DOEA to make frequent operational course corrections. It is difficult for DOEA to be agile enough to address these changes with outdated, inflexible, and expensive to modify technologies.

4. The reality is DOEA must do more with less. The Exhibit below shows there has been a marked 60.82% decrease in DOEA’s Budget, 3.56% decrease in DOEA employees, while at the same time there has been a 12.59% increase in the number of clients served and an 86.39% increase in the number of providers from 2011-2015.

<table>
<thead>
<tr>
<th></th>
<th>% Change from 2011-2012</th>
<th>% Change from 2012-2013</th>
<th>% Change from 2013-2014</th>
<th>% Change from 2014-2015</th>
<th>Percent Increase/Decrease over 3 years</th>
<th>Percent Increase/Decrease over 5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
<td>2.40%</td>
<td>-65.43%</td>
<td>0.87%</td>
<td>0.64%</td>
<td>10.57%</td>
<td>-60.82%</td>
</tr>
<tr>
<td>Employees</td>
<td>0.25%</td>
<td>-0.67%</td>
<td>-1.56%</td>
<td>-1.59%</td>
<td>-3.23%</td>
<td>-1.56%</td>
</tr>
<tr>
<td>Clients</td>
<td>8.09%</td>
<td>3.94%</td>
<td>5.55%</td>
<td>5.83%</td>
<td>-0.43%</td>
<td>12.59%</td>
</tr>
<tr>
<td>Providers</td>
<td>11.30%</td>
<td>-5.15%</td>
<td>58.35%</td>
<td>-60.58%</td>
<td>86.39%</td>
<td></td>
</tr>
</tbody>
</table>

Exhibit 2: Comparison of DOEA’s Budget and FTE Year-to-Year Percent Change (2011-2015)

The cost of remaining status quo will remain high due to the current systems and processes continuing to operate inefficiently and in siloed environments, placing the realization of DOEA’s goals and objectives in jeopardy. In addition, there will be a continuation of inefficient communication and workflow between DOEA, AAAs/ADRCs, and Lead Agencies. Finally, DOEA will likely forgo any cost savings without the implementation of modern technologies as continuing to build on the current, outdated technologies will prove more expensive and less efficient.

SECTION 3 STRATEGIC BUSINESS NEED

The team received and reviewed relevant Department documentation and other related material in collecting and cross-referencing salient data points across the organization. In addition to reviewing documentation, the team conducted data-gathering sessions with select Divisions and several remote Offices within DOEA. These sessions helped to provide further insight into the current environment, defined as-is and to-be process flows, requirements, issues, barriers, opportunities, and the potential roles within the business processes. The information collected from the documents, process flows, and requirements, as well as strategy and data gathering sessions, helped validate the strategic business need of DOEA for a project to implement an enterprise client management system.

This research identified the need for greater efficiency, workflow, better risk management, and executive decision support via more robust reporting and analytics. For DOEA to effectively manage and leverage data pertaining to clients, services, and providers, it must be classified,
summarized, and tailored for staff, office managers, and executive decision-makers. In addition, DOEA wants to provide a much more functionally robust, efficient, reliable, and user-friendly method of serving their clients.

3.3 **IMPROVED CLIENT SERVICE**

DOEA’s goal of improving client service could be enhanced with a solution providing the following capabilities:

- Easy and intuitive access to Department information, services, and programs;
- Consolidated client central record providing a holistic view of client activity and interaction; and
- Increased reporting and analytics capability allowing DOEA leadership to monitor client trends and plan strategically to meet their changing needs.

Because of the improvements and enhancements described above, the new system will allow DOEA to provide easier access to client services and to be more responsive to client requests which should translate into increased overall client satisfaction.

3.2 **INCREASED STAFF EFFICIENCY**

DOEA is faced with meeting the needs of a growing client population with fewer resources. To effectively address this reality, staff efficiency will need to increase by eliminating manual processes where possible and implementing reengineered business processes designed for optimal productivity. Increased staff efficiency could be realized with a solution providing the following capabilities:

- Consolidated central client record for managing all client-related information, documentation, and contacts (case notes, medical information, caregiver contact information, etc.).
- Efficient system interface providing a staff-specific work queue dashboard displaying current assignments, alerts, calendaring, workflow and automated communication, and collaboration tools.
- Enhanced workflow eliminating manual processes and increasing staff collaboration and efficiency.
- Better management capabilities via a staff management dashboard allowing supervisors to monitor staff work queues, assign tasks, and access productivity analytics and reports.
- Enhanced mobile capability allowing staff to:
  - Seamlessly complete work assignments remotely via Wi-Fi or cellular; or
  - Work offline with automatic system synchronization when back in network range.
- Enhanced and automated scheduling capabilities:
  - Automated scheduling based on staff-defined business rules; and
  - Appointment reminders and route mapping optimization for assessors who travel to client locations.

These technology tools will save valuable staff time through proactive notifications of assigned work and case statuses, reduction of redundant data entry, and prevention of errors and repeat work.

### 3.3 ENHANCED DATA MANAGEMENT, ANALYTICS, AND REPORTING

Effective and efficient management of client-centric data will enhance the capture, accuracy, integrity, security, and reporting of data tied to critical Department functions through the following:

- Improved data capture, accuracy, and integrity through:
  - Standardized entry screens and forms;
  - Field- and screen-level validation ensuring required data is entered and validated; and
  - Pre-defined drop-down list values that significantly reduce or eliminate data entry errors.

- Standardized and automated client intake processing.

- Automated correspondence generation, reducing manual entry errors.

- Enhanced data security through:
  - Encryption of all data in transit and at rest;
  - Role-based access controls to restrict access to Health Insurance Portability and Accountability Act (HIPAA) Protected Health Information (PHI) and other confidential data to only those with a business need to know; and
  - Increased data availability using enhanced load balancing, fault tolerance, and disaster recovery capabilities.

- Improved data reporting and analytics via more advanced reporting capabilities including ad hoc and customizable reports as well as trend analysis using bar graphs, charts, heat maps, and other advanced reporting features.

### 3.4 INCREASED EFFICIENCY AND EFFECTIVENESS OF INFORMATION TECHNOLOGY RESOURCES

Operation and maintenance of the current antiquated CIRTS system is resource-intensive, inflexible, and costly. As with other areas, the DOEA Bureau of Information Systems is being asked
to do more with fewer resources. Choosing the right technology solution as well as an appropriate operations and maintenance strategy that augments IT’s strengths and reduces demands would provide the following benefits:

- Optimization of IT resources by:
  - Reducing the operation and maintenance support demands on IT staff;
  - Reducing the need to recruit and retain resources with arcane and costly skill sets; and
  - Enabling key resources to provide timely configuration and customizations to address internal and external stakeholder requirements.

- Enhanced system availability and reliability through:
  - Increasing the reliability and security of remote system access by mobile users;
  - Improving system performance using multiple highly-available, redundant, load-balanced web servers; and
  - Ensuring all data is continually and reliably backed up by the vendor.

SECTION 4   BASELINE ANALYSIS

A baseline analysis helped to establish an initial understanding of DOEA’s current business processes, stakeholder groups, and functions managed. This baseline analysis included a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis as well as identification of basic assumptions and constraints.

4.1 CURRENT BUSINESS PROCESSES

The Exhibit below illustrates the functions and systems/tools managed by DOEA and partner organizations. A detailed list of DOEA applications and their platforms, development language(s), reports, interfaces, and monthly maintenance cost can be found in the list of DOEA applications described in the Microsoft Excel spreadsheet titled “DOEA 2017 Application Inventory List.xlsx” embedded below.
<table>
<thead>
<tr>
<th>ENTITY</th>
<th>FUNCTION</th>
<th>SYSTEMS/TOOLS</th>
</tr>
</thead>
</table>
| DOEA   | DOEA provides direct services through its Division of Statewide Community-Based Services, which works through the state's eleven Area Agencies on Aging and local service providers to deliver essential services to the elder population of Florida. | Adult Care Food Program  
Automated Contract Management System  
Adult Protective Services Referral Tracking Tool  
CIRTS  
DOEA Reporting Systems  
DOEA Tracking Systems  
Microsoft Access  
Microsoft Excel  
Microsoft Outlook  
Ombudsman Management Information System, LTCOP  
ReferNET  
User Management System |
| AAAs/ADRCs | AAAs respond to the needs of Americans 60 and over in every local community by providing a range of options allowing older adults and adults with disabilities to choose home and community-based services and living arrangements. ADRCs provide information and referrals to elders, disabled persons, and adults age 18 and older who have a serious mental illness (such as bipolar disorder, schizophrenia, or clinical depression) or intellectual disability. | CIRTS  
Google Calendar  
Microsoft Access  
Microsoft Excel  
Microsoft Outlook  
ReferNET  
Square 9 SmartSearch  
TimeTap |
| Community Care for the Elderly Lead Agencies and Other provider agencies | Lead Agencies assist functionally impaired elderly persons to live dignified and reasonably independent lives in their own homes, homes of relatives or caregiver’s home. | CIRTS  
Google Calendar  
Microsoft Access  
Microsoft Excel  
Microsoft Outlook  
ReferNET  
Square 9 SmartSearch  
TimeTap |

**Exhibit 3: CIRTS Entities, Functions, and Systems**

In evaluating the elder services functions and processes, DOEA’s seventeen CARES offices and eleven AAAs/ADRCs conduct similar processes but execute those processes quite differently. Moreover, the composition of their portfolio includes custom-developed applications, Microsoft Access databases, commercial-off-the-shelf (COTS) solutions, and Microsoft Excel spreadsheets. This environment, lacking centralized enterprise oversight and standardization, has created
inconsistency across data elements and has been a root cause for data redundancy. Within DOE, the lack of direct communication channels, workflows, and access points further exacerbate these duplications and inconsistencies. There is an unmet need within DOE to standardize processes and more efficiently access and share information and data.

4.2 SWOT Analysis

As a component of the baseline analysis, an in-depth Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis based upon research, data gathering sessions, and internal strategy sessions, reveals there are several threats and weaknesses within DOE’s current business processes and environment that a new client management system implementation would successfully address.

The SWOT of the current DOE business process and environment are depicted in the Exhibit below. Many of the weaknesses displayed can be solved via the opportunities identified which are features of a client management system implementation.

<table>
<thead>
<tr>
<th><strong>Strengths</strong></th>
<th><strong>Weaknesses</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• DOEA’s experience administering a variety of innovative home and community-based programs in designing the processes and system necessary for efficient execution of program processes.</td>
<td>• Current statewide client information data system used by the aging network lacks functionality that would improve service delivery and staff accountability.</td>
</tr>
<tr>
<td>• A substantial amount of historical client data available when migrating to a new and improved system.</td>
<td>• Non-standardized business processes.</td>
</tr>
<tr>
<td>• Well-documented Department policies, procedures, business processes, and requirements.</td>
<td>• Manual data collection and entry.</td>
</tr>
<tr>
<td>• Skilled and experienced staff available to assist with process efficiency redesign, requirements definition, and ultimately system selection.</td>
<td>• Disparate systems and data sets.</td>
</tr>
<tr>
<td>• A mature Bureau of Information Systems with experienced leadership as well as defined processes and governance.</td>
<td>• Integrity, accuracy, and security of data.</td>
</tr>
<tr>
<td></td>
<td>• Lack of centralized client record via enterprise case management.</td>
</tr>
<tr>
<td></td>
<td>• Limited or ineffective workflow.</td>
</tr>
<tr>
<td></td>
<td>• Lack of enterprise content management.</td>
</tr>
<tr>
<td></td>
<td>• Limited mobile capabilities.</td>
</tr>
<tr>
<td></td>
<td>• Antiquated and inflexible technology.</td>
</tr>
</tbody>
</table>
### Opportunities

- Elimination of time-consuming manual processes.
- Business processes reengineering to increase staff efficiency and effectiveness.
- Selection of a leading-edge technology solution aligned with DOEA process improvement efficiencies.
- Providing staff with the necessary technology tools to manage more efficiently and timely support DOEA client needs.
- Providing leadership with the reporting and analytical tools necessary for strategic planning and reporting.

### Threats

- Increasing trends in the number of DOEA clients straining funding and staffing levels.
- Lack of communication, collaboration, workforce management, document management, and workflow tools among partner agencies providing services.
- Antiquated, inflexible, and difficult to maintain technology resulting in the inability to adapt to necessary program process improvement objectives.
- Funding approval from the Florida State Legislature and Federal Social Security Administration.

### Exhibit 4: SWOT Analysis of DOEA Processes and Environment

#### 4.3 Assumptions and Constraints

For awareness and consideration in moving forward with the CIRTS project, several assumptions and constraints were documented during discussions with DOEA CARES offices, AAAs/ADRCs, and Lead Agencies.

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Divisions, Bureaus, Offices, AAAs, ADRCs, and Lead Agencies will be included in the CIRTS project.</td>
<td>The system will focus on a central client data management system and not outside functionality (e.g., accounting systems and human resource systems).</td>
</tr>
<tr>
<td>The CIRTS project has the necessary executive and business sponsorship.</td>
<td>DOEA attempted to replace ReferNET in 2015 and was unsuccessful; therefore, some areas of DOEA may be resistant to undergo another implementation effort.</td>
</tr>
<tr>
<td>All Divisions, Bureaus, Offices, AAAs, ADRCs, and Lead Agencies will support standardization of business processes.</td>
<td>The effort to replace CIRTS would extend over several years with potential for leadership changes during that time.</td>
</tr>
<tr>
<td>The requested funding for the enterprise CIRTS project will be available in line with project expectations.</td>
<td>Funding for the enterprise CIRTS project is subject to legislative approval.</td>
</tr>
<tr>
<td>The entire Department’s elder services processes fall into the standardized application framework.</td>
<td>Obtaining matching Federal funds for the enterprise CIRTS project is subject to Social Security Administration approval.</td>
</tr>
<tr>
<td>DOEA will operate at full capacity - 52 Weeks Per Year; 40 Hours Per Week.</td>
<td>Staff availability for project related work will be limited, introducing a matrixed project team.</td>
</tr>
</tbody>
</table>

### Exhibit 5: Assumptions and Constraints
SECTION 5  BUSINESS PROCESS REENGINEERING AND REQUIREMENTS

This section will help to establish a basis for understanding the business process requirements the proposed solution must meet. It will also outline the criteria the project will use in selecting an appropriate solution.

As part of the data and information gathering sessions, the team met with several DOEA Divisions, AAAs/ADRCs, and Lead Agencies to identify and analyze the current state of the client management applications across DOEA and discuss their desired future state functionality. Over the course of the discussions with each Division, there were several overarching processes shared across each entity. The heat map in the Exhibit below depicts the intersection of those shared processes.

<table>
<thead>
<tr>
<th>Process</th>
<th>DOEA/CARES</th>
<th>AAA/ADRC</th>
<th>Lead Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFORMATION AND REFERRAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTAKE</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ASSESSMENT</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDICAL CASE FILE REVIEW</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAFFING AND LOC</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PASRR</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RECOMMENDED PLACEMENT</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FOLLOW-UP</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>SCREENING</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CARE PLANS</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>MONITORING</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GRIEVANCE</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>CONTRACTS/BILLING</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Exhibit 6: DOEA Core Processes Heat Map

A list and associated descriptions of the functionality of DOEA’s Core Processes are listed in Appendix II of this document.

5.1  PROPOSED BUSINESS PROCESS MAPS

The to-be business processes and associated requirements will provide the lens through which potential solution options are evaluated and ultimately how DOEA will select the solution proposal that most aligns with DOEA’s needs.

In support of DOEA’s business process reengineering effort, the team worked with DOEA SMEs to define and document their as-is and to-be process flows.

The detailed Business Process Reengineering (BPR) Document is available upon request.
5.2 **PROPOSED FUNCTIONAL REQUIREMENTS**

The team worked with DOEA subject matter experts (SMEs) to define the proposed future state functional requirements necessary to support core DOEA program processes. The following table provides a high-level list of the proposed solution functional requirements.

A list of the detailed functional requirements is defined in the Requirements Traceability Matrix and is available upon request.

<table>
<thead>
<tr>
<th>AREA</th>
<th>HIGH-LEVEL FUNCTIONAL REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Client Management</strong></td>
<td>• Client Central Record&lt;br&gt;• Case Management&lt;br&gt;• Lifecycle Management&lt;br&gt;• Workflow Management&lt;br&gt;• Complaint Management&lt;br&gt;• Case Prioritization&lt;br&gt;• System-Generated Correspondence&lt;br&gt;• Calendaring and Scheduling&lt;br&gt;• Electronic Signatures</td>
</tr>
<tr>
<td><strong>Financial</strong></td>
<td>• Claims Management and Financial Reporting&lt;br&gt;• Provider Claims Adjudication&lt;br&gt;• Reconciliation</td>
</tr>
<tr>
<td><strong>Workforce Management</strong></td>
<td>• Resource Utilization&lt;br&gt;• Task Assignment&lt;br&gt;• Performance Evaluation&lt;br&gt;• Work Prioritization</td>
</tr>
<tr>
<td><strong>Mobile Work Force</strong></td>
<td>• Mobile Device Support (laptop, tablet, or smartphone)&lt;br&gt;• Mobile Assessments (Wi-Fi and Cellular)&lt;br&gt;• Offline Work Capabilities and Subsequent Data Synchronization&lt;br&gt;• Route Management (automated GPS route planning and directions)</td>
</tr>
<tr>
<td><strong>Intake and Referral</strong></td>
<td>• Application&lt;br&gt;• Workflow</td>
</tr>
</tbody>
</table>
### Exhibit 7: Proposed Functional Requirements

#### 5.3 Proposed Technical Requirements

The team worked with DOEA SMEs to define the proposed future state technical requirements necessary to support core DOEA program processes. The following table provides a high-level list of the proposed solution technical requirements.

A list of the detailed technical requirements is defined in the Requirements Traceability Matrix and can be found at the following link: [CIRTS RTM](#)
<table>
<thead>
<tr>
<th><strong>Infrastructure</strong></th>
<th>The enterprise client management system infrastructure should be cost-effective, flexible, and scalable.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The solution should utilize the existing Department hardware, software, storage, and network to the extent possible to maximize the prior investment in technology.</td>
</tr>
<tr>
<td></td>
<td>System should provide integration between State Data Centers and data hosted in the cloud, where applicable.</td>
</tr>
<tr>
<td></td>
<td>System should adhere to applicable Department and State of Florida information technology security standards, policies, and procedures.</td>
</tr>
<tr>
<td></td>
<td>System should provide access to the Divisions’ Application Programming Interface (API) to better share and view important information and data.</td>
</tr>
<tr>
<td></td>
<td>The overall System should be able to be make minor customizations and configuration changes by Department personnel after the deployment period and a reasonable period of knowledge transfer.</td>
</tr>
<tr>
<td></td>
<td>System should support integration with mobile device technology currently available in the market.</td>
</tr>
<tr>
<td></td>
<td>System should provide data analytics and data mining capabilities in a manner that does not degrade system operations or performance.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>User Access Management</strong></th>
<th>System should provide the ability to define users’ role-based access.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>System should provide the capability for administrators and authorized business users to configure access management.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Maintenance</strong></th>
<th>System should allow maintenance activities that do not invalidate the upgrade path.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>System should allow Department personnel to coordinate planned maintenance activities.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Data</strong></th>
<th>System should provide data segregation for Divisions and Offices defined by DOEA.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>System should provide in-transit and at-rest data encryption capabilities for the database for Divisions and Offices defined by DOEA.</td>
</tr>
<tr>
<td></td>
<td>System should provide extract, transform, and load (ETL) capabilities for the implementation.</td>
</tr>
<tr>
<td></td>
<td>The solution must provide an enterprise data model.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Disaster Recovery</strong></th>
<th>System must provide Disaster Recovery capabilities with negotiated Service Level Agreements (SLAs) within agreed upon timeframes (Recovery Point Objective and Recovery Time Objective) to return to full operations.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>System must provide Data Backups with frequency and retention period defined by DOEA.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Technology Roadmap</strong></th>
<th>System should provide foundational releases that do not impact any existing customizations.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The Vendor should provide annual and quarterly advance communication for upcoming products and enhancements.</td>
</tr>
</tbody>
</table>

**Exhibit 8: Proposed Technical Requirements**
SECTION 6  MARKET TRENDS, PUBLIC SECTOR TRENDS, AND SOLUTION OPTIONS

To provide context to the assessment of the enterprise options for DOEA, the team reviewed viable market technology solutions and how comparable states agencies addressed similar challenges. The team researched these trends and considered them as a component of the solution recommendation.

Over the past decade, elder services agencies have placed a higher importance on streamlining their management processes to better serve their growing constituents with fewer resources while maintaining the ability to adapt to changing operational needs. Such needs include faster processing times, expanded client access to information, expanded mobile outreach, improved operational efficiency, more effective workflow, enhanced workforce management, enterprise content management, and better reporting and analytics.

The team conducted information-gathering sessions with multiple solution providers, systems integrators, and related elder services agencies for further analysis of the current client management systems market. A more detailed description of the approach and technology solutions utilized by these states and technology solutions proposed by vendors are available in Appendix I – Public Sector Tactics and Market Technology Vendors.

These sources included:

- Discussions with the following state agencies to discuss their solution strategies:
  - Alabama Department of Senior Services;
  - Arizona Department of Health Services, Arizona Health Aging;
  - California Department of Aging;
  - Georgia Department of Human Services, Division of Aging Services;
  - New York State Office for the Aging; and
  - Pennsylvania Department of Aging.

- With guidance from DOEA Chief Information Officer, Steve Grantham, demonstrations from and interviews with representatives from leading public sector systems software providers including:
  - Computer Aid, Inc. (CAI);
  - CareDirector;
  - Intact Partners;
  - Knowledge Services;
  - Oracle;
o Mediware;
o PeerPlace;
o Salesforce;
o Stratégé Partners; and
o Therap.

- Interviews with leading public sector system integrators including BIAS Corporation and Deloitte.
- Research and analysis of Customer Relationship Management (CRM) and Enterprise Content Management (ECM) market solutions from Gartner, Inc.

6.1 Key Themes, Salient Points, and Lessons Learned

From the above research, demonstrations, and interviews the following key themes, findings and lessons learned emerged:

<table>
<thead>
<tr>
<th>Theme</th>
<th>Salient Points and Lessons Learned</th>
</tr>
</thead>
</table>
| **Adoption of Centralized Client Management Solutions in Elder Care Organizations** | State agencies are adopting and implementing leading edge client management technology solutions to administer their elder services programs for their constituents more efficiently and effectively.  
  Several of the most recent state-wide elder services management systems implementations were with some of the vendors interviewed for the market analysis.  
  There is a recent movement to cloud technologies as faster data, process, and information delivery times are being demanded and this trend is gaining support within the health and human services community.  
  There is a big push for environmental awareness in implementing technology solutions that reduce operations and maintenance overhead for resource-strapped IT organizations. |
| **Strong Executive Sponsorship and Project Governance**       | States who have successfully implemented new enterprise client management systems all had strong executive sponsorship and clearly identified project governance structures to define the decision-making processes prior to selecting the appropriate solution and throughout the initiative.  
  Successful projects delineate responsibilities for oversight of the roll-out of certain phases. |
### THEME

**Business Process Reengineering and Standardization**
- To avoid excess customization in the new system and achieve benefits sooner, many public sector entities enter a period of business process reengineering prior to the implementation phase. Entities not performing business process reengineering tend to have large volumes of customizations and generally must wait until they perform the reengineering post-implementation to achieve expected project results.
- Overall support and maintenance costs are lower due to thorough business process reengineering and standardization effort.
- Data cleanup, mapping, migration, and conversion are better executed if business process engineers are familiar with the data and map out the system’s functionalities and processes prior to implementation.
- Health and human services agencies are often too quick to select the solution first and then don’t follow through with their business transformation given the functionalities of the vendor system.

**Limit System Customizations**
- Limiting customizations reduces the implementation and maintenance cost of a packaged system and enables the agency to take advantage of new functionality via standard vendor upgrades.
- Limiting excess customizations to functionality can be accomplished by aligning improved processes with new system functionality.

**Selection of System Integrator**
- While procurement strategies can vary widely, there is consensus that the selection of the right System Integrator (SI) can be just as important as the selection of the right software package.
- The SI was critical to the success of each of the interviewed parties' client management system projects in providing expertise during system design, configuration or development, data conversion, testing, end user training, organizational change management, and post-implementation warranty and support.

**Phased Implementation Approach**
- Using an “early success” and a “crawl, walk, run” phased approach allows an organization to break down the initiative in smaller, more manageable pieces to reduce risks and realize benefits sooner.
- Lessons learned in each phase can be applied to subsequent phases for continuous process improvement on the lifecycle of the project.

**Reporting and Analytics**
- There is a need for leadership to have predictive analysis capabilities and forward-looking strategic planning to proactively address increasing client populations and changing environments.

**Organizational Change Management (OCM)**
- Attaining buy-in from every individual within the organization, especially from those at higher levels, leads to an easier transition, more successful implementation, and better adoption of change.
- Key components within OCM include organization transformation, internal communication, job training, system training, and external (public) communication.

### Exhibit 9: Key Themes, Salient Points, and Lessons Learned

#### 6.2 SOLUTION OPTIONS (CONSIDERATIONS)

During the market analysis and interviews with State agencies, a few topics arose that should be considered and evaluated at the outset of the solution selection process. Each of these items is
defined in this section and assessed with respect to the objectives of the analysis using a combination of industry research, comparison with client management environments of similar state agencies, and the professional experience of the team. The topics in this section are:

- Comparison of Custom Development, Framework, and Commercial-off-the-Shelf (COTS) solutions;
- Outsourcing or internal operations and maintenance support;
- Software Licensing Models; and
- Technology Solution Cost Drivers.

### 6.3 Custom Development, Framework, or COTS Software

The following provides a brief description of each approach to software implementations:

- **Custom Development:** Software that is specially designed and developed from scratch to accommodate a customer’s precise preferences and expectations.

- **Framework:** A software Framework is a universal, reusable environment that provides particular functionality as part of a larger platform to facilitate and develop or customize applications, products and solutions.

- **COTS:** Commercial Off-The-Shelf (COTS) is a term that references non-developmental items sold in the marketplace. A COTS system is typically designed for a unique purpose (e.g., client management) and generally does not require custom development before installation.

The first fundamental topic to consider is whether DOEA should develop its client management software internally, implement a COTS solution, or a Framework software solution. The following Exhibit displays the factors of scalability, stability, cost, and ease of implementation of Custom Development versus the purchase of a COTS or Framework client management software solution.

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>CUSTOM</th>
<th>FRAMEWORK</th>
<th>COTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SCALABILITY</strong></td>
<td>Custom solutions are generally designed for precise needs not readily available in a COTS or Framework solution and require additional development to address scalability.</td>
<td>Framework providers offer a reusable environment. As such, Framework products inherently support scalability when aligned with the platform available.</td>
<td>COTS providers often build their solutions to support the common requirements of many organizations that differ in size and complexity. COTS products inherently support both future customizations and scalability when aligned with their product road map timeline.</td>
</tr>
<tr>
<td>FACTOR</td>
<td>CUSTOM</td>
<td>FRAMEWORK</td>
<td>COTS</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>STABILITY</strong></td>
<td>Custom Development solutions are typically very stable as they are tailored to an organization’s exact business requirements and those requirements do not change. Changes in requirements may likely require reprogramming to the Custom Development instead of minor configuration.</td>
<td>Unless heavily customized, Framework software is typically very stable as it has been thoroughly tested and proven by a large user base. Framework software vendors typically provide support, patches, and upgrades/enhancements to maintain the base technology as part of an annual maintenance contract.</td>
<td>Unless heavily customized, COTS software is typically very stable as it has been thoroughly tested and proven by a large user base. COTS software vendors typically provide support, patches, and upgrades/enhancements to maintain their core product as part of an annual maintenance contract.</td>
</tr>
<tr>
<td><strong>COST</strong></td>
<td>Initial development and implementation costs of custom software is typically high as it generally takes significantly longer to implement than COTS or Framework. Long term maintenance costs are generally higher for Custom Development solutions as organizations that Custom Development software must maintain deep software development skills post-implementation to support updates and modifications to the product.</td>
<td>For large-scale, complex applications, it is typically less expensive to buy Framework software than Custom Development. A Framework solution can reduce development costs by providing a solid foundation of standard functionality along with the tools needed to further customize the software to meet requirements. When maintaining a Framework system, there are ongoing subscription fees. However, this is typically offset with less technical and development staff to address the operations and management of the system.</td>
<td>For applications with a common feature set and mature adoption, it is typically less expensive to buy a COTS solution than Custom Development. A COTS solution can reduce development costs by providing a significant majority of the required functionality along with the ability to further configure the software to meet requirements. When maintaining a COTS system, there are ongoing subscription fees. However, this is typically offset with less technical and development staff to address the operations and management of the system.</td>
</tr>
</tbody>
</table>
Where business processes are standardized and detailed requirements clearly defined, Custom Development solutions can be created to precisely match the business process, which can be a significant benefit. However, Custom Development solutions generally take significantly longer to implement than COTS or Framework alternatives since many resources are needed to design, develop, and test every system requirement.

Framework solutions typically take less time to implement than Custom Development as it includes base functionality but can take longer to implement that a COTS solution if significant customization (development) is required.

COTS solutions typically take least time to implement compared to Custom Development and Framework solutions as most functionality is inherent in the software, requiring primarily configuration and limited customization.

Exhibit 10: Custom vs. Framework vs. COTS Software

Each of the implementation options offer advantages and disadvantages which are summarized in the Exhibit below.

<table>
<thead>
<tr>
<th>ALTERNATIVES</th>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
</tr>
</thead>
</table>
| Option 1 – Custom Development | ▪ System design and functionality can be developed to meet exact needs  
▪ Internal knowledge of the system                              | ▪ Locked into technology that becomes outdated quickly  
▪ History of previous custom development failures  
▪ Longer time to implement  
▪ Higher risk  
▪ Typically higher cost                                     |
| Option 2 – Framework Platform | ▪ Extended custom development tools                                   
▪ Product updates provided by vendor  
▪ Research and development provided by the vendor  
▪ Drives standardization  
▪ Extends flexibility                                        | ▪ Customizations may impact upgradability  
▪ Longer implementation than COTS                           |
### Exhibit 11: Alternatives, Advantages, and Disadvantages

Each of the implementation options have different implementation time frames which are summarized in the Exhibit below.

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
</table>
| Option 3 – COTS Platform | - Pre-built solution  
- Industry leading best practices  
- Product updates provided by vendor  
- Research and Design (R&D) provided by the vendor  
- Drives standardization  
- Shorter implementation | - Limits flexibility  
- Requires specialized resources  
- Potentially significant Operational Change Management (OCM) impact |

### Exhibit 12: Custom vs. Framework vs. COTS Average Implementation Time Frame

#### 6.4 Outsourcing or Internal Management of Technology Support

The second topic to be addressed is whether to outsource all, some, or none of the operations and maintenance of the client management system.

Outsourcing support for an enterprise client management system generally includes the following options:
- **Infrastructure as a Service (IaaS):** IaaS is a form of cloud computing providing virtualized computing resources over the Internet including:
  - System maintenance, upgrades, backup, resiliency, and disaster recovery;
  - Scalability, on-demand or dynamically;
  - Automation of administrative tasks;
  - Automatic patches and updates;
  - Policy-based services; and
  - Predictable budgeting versus internally managed solutions.

- **Software as a Service (SaaS):** SaaS is a form of cloud computing in which a third-party provider hosts applications and makes them available to customers typically via a subscription-based software licensing. SaaS is a fully hosted solution including:
  - High scalability of services, functionality, usage, etc.;
  - Automatic patches and defined functionally road map updates;
  - System maintenance, upgrades, backup, resiliency, and disaster recovery;
  - High accessibility and persistence; and
  - Predictable budgeting versus internally managed solutions.

- **Platform as a Service (PaaS):** is a category of cloud computing services providing a platform allowing customers to develop, run, and manage applications without the complexity of building and maintaining the infrastructure typically associated with developing and launching an application. PaaS has the following attributes:
  - High scalability of services, functionality, usage, etc.;
  - Automatic patches and updates to base application;
  - System maintenance, upgrades, backup, resiliency, and disaster recovery;
  - High accessibility and persistence;
  - Reduces time to release new applications; and
  - Predictable budgeting versus internally managed solutions.

The Exhibit below identifies relevant differences between outsourcing and internally managing operations and maintenance system support.
### Scalability

<table>
<thead>
<tr>
<th><strong>Factor</strong></th>
<th><strong>Outsourced</strong></th>
<th><strong>Internally Managed</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scalability</strong></td>
<td>An outsourced solution is highly scalable as the responsibility for managing the resources required to meet service level expectations lies with the contracted provider, thus minimizing the responsibility of the client to grow the solution to meet business needs.</td>
<td>The client is responsible for managing the resources required to meet service level expectations. This can be very challenging to meet dynamic business needs in a state environment where resource allocation can be an arduous and lengthy process.</td>
</tr>
</tbody>
</table>

### Stability

<table>
<thead>
<tr>
<th><strong>Factor</strong></th>
<th><strong>Outsourced</strong></th>
<th><strong>Internally Managed</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stability</strong></td>
<td>An outsourced solution is highly stable as the outsourced vendor is responsible for maintaining and upgrading the environment (infrastructure and applications) in line with agreed upon service level expectations. They have deeply skilled resources to manage and maintain their supported environments as well as mature and processes and procedures for upgrading and managing the environment.</td>
<td>The availability of internal resources (staff, funding, etc.) as well as the maturity of the organizations governance and processes will greatly determine the stability of the supported environment.</td>
</tr>
</tbody>
</table>

### Cost

<table>
<thead>
<tr>
<th><strong>Factor</strong></th>
<th><strong>Outsourced</strong></th>
<th><strong>Internally Managed</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td>Taking into consideration the total cost of ownership, outsourced solutions can be comparable or cost less than that of an internally managed environment. This is primarily due to taking advantage of economies of scale regarding resources. It also allows for predictable budgeting which better aligns with state funding cycles.</td>
<td>Internally managing a solution requires ownership of every solution component and seldom includes discounted pricing unless purchased through a state term contract. Predictable budgeting can be a challenge in state funding cycles.</td>
</tr>
</tbody>
</table>

### Transition and Effectiveness

<table>
<thead>
<tr>
<th><strong>Factor</strong></th>
<th><strong>Outsourced</strong></th>
<th><strong>Internally Managed</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transition and Effectiveness</strong></td>
<td>Outsourced application support is a mature industry making the transition to a third-party managed services provider a relatively straight-forward process. If an experienced, mature, and proven services provider is chosen, the effectiveness of this approach is quite high.</td>
<td>Because most state organizations are using an internally managed providing or at best a hybrid approach, there is no concern with transition. However, it is a significant challenge for states to provide the necessary ongoing internal management and support of the systems environment aligned with an appropriately skilled support organization. This is primarily a result of funding and limited agility afforded in the funding process.</td>
</tr>
</tbody>
</table>

---

**Exhibit 13: Outsourced vs. Internally Managed Application Support**
6.5 **SOFTWARE LICENSING MODELS**

There are two types of licensing/subscription models for COTS and Framework solutions. The first is a per-user license model, and the second is an enterprise, or “site,” license model. Under a per-user license agreement, the software provider will charge an incremental cost for each user of the system. These costs can be further refined depending on the role and function of the user. An enterprise, or “site,” license model requires an organization to pay a fixed amount for the software regardless of the volume or number of users accessing the system.

The Exhibit below lists a comparison between the per-user and enterprise software licensing models. While this analysis is presented to inform the overall analysis, it is important to note the chosen software vendor will propose their precise license pricing model.

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>PER USER</th>
<th>ENTERPRISE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SCALABILITY</strong></td>
<td>Cost and usage of the software is directly relational to the number of system users; there is an incremental cost for each additional system user. Clients can increase licensing to support additional users.</td>
<td>Software cost is fixed and does not change with the number of users, volume, or resource needs. In some instances, enterprise licenses may be capped at certain level of users.</td>
</tr>
<tr>
<td><strong>COST</strong></td>
<td>The licensing model cost will need to be addressed as part of the procurement process, as one option may end up being more beneficial over the other depending on the number of users, how the vendor sets up the system cost (enterprise wide, by function, number of records, etc.), and the actual cost for each model.</td>
<td>Because of no incremental cost, all employees can use the system for any purpose applicable to their job function.</td>
</tr>
<tr>
<td><strong>IMPLEMENTATION</strong></td>
<td>If there are high costs to operate the system, users with lesser roles may be kept out of the system, leading to more offline or manual processes.</td>
<td></td>
</tr>
</tbody>
</table>

**Exhibit 14: Licensing Model Summary**

6.6 **TECHNOLOGY SOLUTION COST DRIVERS**

Based on the solution chosen, there will be additional cost drivers affecting the overall cost of the project. Typically, these individual cost factors are combined into the following three categories as listed below:

- **Required Ancillary Purchases:** These are upfront items may need to be purchased to enhance, upgrade, or deploy a new system. Such costs include additional software licensing, computer hardware (PCs, laptops, mobile devices, etc.), augmentation data center facilities, and any supporting infrastructure technology systems.

- **Implementation:** These are the in-house and contracted labor costs required to support the deployment a new system. Such costs include business process reengineering, requirements development, project oversight, software installation and configuration, software development, system integration, report development, data conversion, data
testing, quality assurance, organization change management (OCM), project team training, and end user training.

- **Operations and Maintenance**: These are all the labor and materials costs needed to support the system throughout its full lifecycle. Such costs include software maintenance, production support, training, software development, upgrades, process improvements, change management, infrastructure support, system administration, ongoing hardware, data center facilities, and other equipment maintenance costs.

## SECTION 7  RECOMMENDATION REPORT

### 7.1 Recommendation Approach

When considering a recommended approach to address DOE’s technology needs today and into the future, the team did so with the following in mind:

- The mission of DOE and governing statutes, rules, policies, and procedures;
- The limitations and inefficiencies of the current processes and antiquated technology systems;
- DOE’s guiding priorities, goals, and objectives for a technology solution; and
- The knowledge gained into how comparable state government elder care agencies and the technology market have successfully responded to the challenges of implementing an enterprise client management system.

Building on the solutions options presented in Section 6.2, the recommendation methodology is structured around the following four elements:

- Alignment to Vision and Goals;
- Cost of Ownership Comparison;
- Benefits Comparison; and
- Risk Analysis and Mitigation.

To properly evaluate the solutions available to DOE to replace their existing system, a minimum set of criteria is critical to ensure all options are compared to a common standard. That common base identified in the sections below will allow solution options to be compared in a consistent manner.

### 7.2 Recommendation Methodology

#### 7.2.1 Alignment to Vision and Goals

The following project vision statement was developed in collaboration with DOE:
Implement an enterprise client management system that assists staff efficiency, enables client access to services, and positions DOEA to plan for and be responsive to changing environmental and operational demands.

The following solution goals were identified to support the project vision:

- **Goal 1**: Enhance overall DOEA staff efficiency and effectiveness with applicable technology tools.
- **Goal 2**: Optimize and standardize key business processes to improve operational efficiencies.
- **Goal 3**: Reduce manual tasks for DOEA, AAA, ADRC, and Lead Agency staff resulting in greater efficiency and faster response to client needs.
- **Goal 4**: Enhance intra and interdepartmental workflow functionality allowing DOEA staff to provide services faster with greater efficiency.
- **Goal 5**: Increase data integrity, standardization, and security toward improved accuracy, operational efficiency, monitoring, reporting, and analytics.
- **Goal 6**: Increase communication channels and collaboration between DOEA CARES AAAs, ADRCs, and Lead Agencies which increases the efficiency of the intake and referral, assessment, staffing, monitoring, and compliance processes across DOEA.
- **Goal 7**: Enhance mobile capabilities including remote data capture, scheduling, and GPS route planning support.
- **Goal 8**: Improve analytical and reporting capabilities providing DOEA leadership the tools to plan resource allotments and operational efficiencies tactically and strategically across DOEA thereby increasing efficiencies and reducing operational costs.

As part of the analysis, each option was assessed against the vision statement and solutions goals. This assessment was qualitative with the alignment presented for each option relative to the other options. Each option was given a score of High (3 points), Medium (2 points), or Low (1 point) for how well the option aligned to the vision and solution goal. The average score for each option was then calculated. The Exhibit below reflects the output of this qualitative assessment:

<table>
<thead>
<tr>
<th>Evaluation of Qualitative Criteria</th>
<th>Options Considered</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vision</strong>: Implement an enterprise client management system that assists staff efficiency, enables client access to services, and positions DOEA to plan for and be responsive to changing environmental and operational demands.</td>
<td><strong>Option 1: Custom Development</strong></td>
</tr>
<tr>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td><strong>Goal 1</strong>: Enhance overall DOEA staff efficiency and effectiveness with applicable technology tools.</td>
<td><strong>Option 1: Custom Development</strong></td>
</tr>
<tr>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>
### Evaluation of Qualitative Criteria

<table>
<thead>
<tr>
<th>Goal</th>
<th>Description</th>
<th>Option 1: Custom Development</th>
<th>Option 2: Framework Platform</th>
<th>Option 3: COTS Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 2</td>
<td>Optimize and standardize key business processes to improve operational efficiencies.</td>
<td>Low</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Goal 3</td>
<td>Reduce manual tasks for DOEA, AAA, ADRC and Lead Agency staff resulting in greater efficiency and faster response to client needs.</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Goal 4</td>
<td>Enhance intra and interdepartmental workflow functionality allowing DOEA staff to provide services faster with greater efficiency.</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Goal 5</td>
<td>Increase data integrity, standardization, and security toward improved accuracy, operational efficiency, monitoring, reporting, and analytics.</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Goal 6</td>
<td>Use technology to increase communication channels and collaboration between DOEA CARES AAAs, ADRCs, and Lead Agencies which increases the efficiency of the intake and referral, assessment, staffing, monitoring, and compliance processes across DOEA.</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Goal 7</td>
<td>Enhance mobile capabilities including remote data capture, scheduling, and GPS route planning support.</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Goal 8</td>
<td>Improve analytical and reporting capabilities providing DOEA leadership the tools to plan resource allotments and operational efficiencies tactically and strategically across DOEA thereby increasing efficiencies and reducing operational costs.</td>
<td>Medium</td>
<td>Medium</td>
<td>High</td>
</tr>
</tbody>
</table>

**Average Score**

<table>
<thead>
<tr>
<th></th>
<th>Option 1: Custom Development</th>
<th>Option 2: Framework Platform</th>
<th>Option 3: COTS Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.3</strong></td>
<td></td>
<td>2.6</td>
<td>2.8</td>
</tr>
</tbody>
</table>

**Exhibit 15: Alignment to Vision and Solution Goals**

#### 7.2.2 Estimated Cost of Ownership

Below is an overview of the results of the cost modeling exercise. For each option, the team modeled costs over a 5-year window starting in July 2018 (FY 18-22). This period was selected for several reasons, including:

- In all options analyzed, the required minimum capabilities can be achieved during a 5-year window. Benefits are related to implementation of the minimum capabilities and should also begin within this window.
- In each case, a 5-year window provides visibility into not only the costs of implementation but also support costs for the system once it reaches steady state.
It is important to note the selection of a 5-year window is not in any way indicative of the lifespan of the new client management system. In all cases, it should far outlive the timelines built into the cost models.

The Exhibit below summarizes expected total cost of ownership for each option over a 5-year period starting in July 2017 (FY 18-22). The total cost of ownership is the sum of the following components:

- **Average Implementation Cost:** Internal (employee count and time) and external (contractors and purchases) expenditures required to design and implement the solution.
- **Average Annual Support Cost:** Annual expenses associated with supporting the proposed system type.
- **Average Total Cost of Ownership over 5 Years:** Expenses associated with supporting a solution during and after its implementation over a 5-year period.

For scoring purposes, more than $15 Million = 1 point, more than $10 Million = 2 points, and more than $5 Million = 3 points.

<table>
<thead>
<tr>
<th>COST CATEGORIES (MILLIONS)</th>
<th>OPTIONS CONSIDERED</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Option 1: Custom Development</td>
<td>Option 2: Framework Platform</td>
<td>Option 3: COTS Platform</td>
<td></td>
</tr>
<tr>
<td>Average Implementation Cost</td>
<td>$11,009,067</td>
<td>$5,000,000</td>
<td>$3,483,750</td>
<td></td>
</tr>
<tr>
<td>Average Annual Support Cost</td>
<td>$3,302,720</td>
<td>$2,700,000</td>
<td>$1,508,000</td>
<td></td>
</tr>
<tr>
<td>Average Total Cost of Ownership over 5 Years</td>
<td>$19,726,000</td>
<td>$13,100,000</td>
<td>$8,761,750</td>
<td></td>
</tr>
<tr>
<td>Average Cost Score</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Exhibit 16: Cost Comparison
Exhibit 17: Custom vs. Framework vs. COTS Average Implementation Cost Comparison

Exhibit 18: Custom vs. Framework vs. COTS Average 5-Year Cost Comparison
7.2.3 Benefits Comparison

All three options were evaluated for benefits that could be realized with the implementation of an enterprise client management system. Each option was given a score of High (3 points), Medium (2 points), or Low (1 point) for how likely or how soon the option would realize each benefit. The average score for each option was then calculated.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Options Considered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drives process standardization.</td>
<td>Medium</td>
</tr>
<tr>
<td>Enhanced Customer Experience and response.</td>
<td>Low</td>
</tr>
<tr>
<td>Enhanced Mobile capabilities and functionality.</td>
<td>Medium</td>
</tr>
<tr>
<td>Enhanced workflow and workforce management.</td>
<td>Low</td>
</tr>
<tr>
<td>Flexible solution with the agility to quickly address, procedural, or statutorily mandated changes as well as environmental and operational needs.</td>
<td>Low</td>
</tr>
<tr>
<td>Easy scalable and extensible solution to address increased environmental and operational demands.</td>
<td>Low</td>
</tr>
<tr>
<td>Minimizes support and operations and maintenance responsibilities.</td>
<td>Low</td>
</tr>
<tr>
<td>Increases data integrity, standardization, and security.</td>
<td>Medium</td>
</tr>
<tr>
<td>Improves analytical and dashboard/reporting capabilities.</td>
<td>Medium</td>
</tr>
<tr>
<td><strong>Average Score</strong></td>
<td><strong>1.4</strong></td>
</tr>
</tbody>
</table>

Exhibit 19: Benefit Comparison

7.2.4 Risk Analysis and Mitigation

All three options being evaluated are complex and challenging. Implementation timelines are in years (not weeks or months) and require significant resources invested to achieve successful completion. The Exhibit below highlights common risks which may be encountered during the implementation regardless of the selected option along with the likelihood. Each option was given a score of High (3 points), Medium (2 points), or Low (1 point) for each risk based on the likelihood of occurrence. The average points for each option are then calculated.
The Exhibit below provides a comparison of the three options across each of the key elements of alignment to goals, cost, benefits, and risk. However, it would be beneficial to DOEA to include both options in a future procurement and let the market determine the best value to DOEA. For scoring purposes High = 3 points, Medium = 2 points, and Low = 1 point. The average points for each option are then calculated.
Based on the overall analysis, the closing salient points addressing DOEAs solution options are offered below:

- **Option 1:** While Custom Development solutions can be designed to meet exact program requirements there are several notable data points listed below that make this option less desirable than Framework or COTS.
  - Custom development solutions typically take considerably more time and resources to design develop and implement than COTS or Framework solutions;
  - Custom development solutions provide fewer benefits and are less likely to achieve project goals than COTS or Framework solutions;
  - Custom development solutions are expensive to implement as well as operate and maintain due to the need to retain IT professionals with the deep and often arcane skills required to support and enhance the system;
  - Enhancements, patches, and updates to the solution (infrastructure and application) would be the responsibility of DOEA; and
  - Custom development solutions are inherently riskier primarily for the reasons listed above.

- **Option 2:** A Framework solution provides a solid base upon which the solution can be further customized and configured. The notable data points for utilizing Framework as a solution option to meet DOEAs needs are listed below:
  - The flexibility of a Framework solution provides a good balance between highly customizable Custom Development solutions and more difficult/costly to customize COTS solutions;
  - Framework solutions provide greater benefits and are more likely to achieve project goals than Custom Development solutions;
  - Framework solutions are typically implemented more quickly than Custom Development but not as fast as COTS;
  - Enhancements, patches, and updates to the base application platform would be the responsibility of the provider;
  - The overall costs of a Framework solution are typically less to implement and maintain than Custom Development solutions but more expensive than COTS; and
  - There is less risk with Framework solutions compared to Custom Development as you are starting with a base platform rather than building from scratch.

- **Option 3:** Although a COTS solution may not address all DOEAs program customizations, the available COTS solutions reviewed offered feature rich capabilities that would address most of the business needs. The notable data points for including COTS as a solution option to meet DOEAs needs are listed below:
  - There is less flexibility to customize with a COTS solution than with Custom Development or Framework;
› COTS solutions provide greater benefits and are more likely to achieve project goals than Custom Development solutions;
› A COTS solution can usually be implemented more rapidly than a Custom Development or Framework solution meeting most of the business needs;
› Enhancements, patches, and updates to the application would be the responsibility of the provider;
› The overall costs of a COTS solution is typically less than Custom Development and Framework solutions; and
› There is less risk with COTS as re starting with an established solution rather than building from scratch or customizing a Framework.

The final recommendation is that it would be beneficial to DOEA to tailor the future ITN procurement toward a COTS or Framework solution but keep an open mind and let the market offer solutions that would provide the best value to DOEA.

7.5 **RECOMMENDED APPROACH AND IMPLEMENTATION TIMELINE**

7.5.1 **IMPLEMENTATION APPROACH**

To be cognizant of the additional resource requirements this project will place on DOEA staff and to lower the risk inherent in IT transformation projects, the team is recommending a phased implementation approach. This approach will provide DOEA with the necessary time to properly plan, obtain funding (state and federal), procure, and execute the project. It will also provide DOEA the bandwidth to plan and execute the organizational transformation this project will bring about. The recommended phases and a brief description of the milestones in each phase are listed below.

- **Phase I:** Phase one includes those milestone activities required to perform business process reengineering, requirements definitions and a market analysis of solution options. The Phase one milestones are detailed below.
  - Define DOEA as-is process flows and design proposed future state processes (to-be);
  - Define system requirements in the form of a requirements traceability matrix based proposed future state processes (to-be); and
  - Perform a market analysis and develop a corresponding report detailing comparable state systems, proposed vendor solution options, estimated costs, risks, implementation approach, estimated timeframes, and recommendations.

- **Phase II:** Phase two includes those milestone activities necessary to secure funding, execute the procurement and begin the organizational transformation. The Phase two milestones are detailed below:
 › Develop, submit, and receive approval of the project Legislative Budget Request (LBR) and accompanying Schedule IV-B (required by the Florida State Legislature for any Information Technology projects over $1,000,000);  
 › Develop, submit, and receive approval for the project Advance Planning Document (APD) and Implementation Plan Document (IPD) to obtain matching funds from the Social Security Administration; and  
 › Develop and execute the Invitation to Negotiate (ITN) to be used to select an appropriate vendor that will provide the best value to the state.

### Phase III

Phase three includes those milestone activities necessary on-board the selected vendor and implement the proposed solution. The Phase three milestones are detailed below:

 › Perform gap-fit analysis updating processes and requirements as appropriate;  
 › Design system;  
 › Develop/configure system, develop interfaces, develop reports, develop correspondence, and convert data;  
 › Test system and train users; and  
 › Deploy system.

#### 7.5.2 IMPLEMENTATION TIMEFRAME

As the potential solution implementation timeframes will vary, it is impossible to know the exact timeframes for implementation until vendor proposals are received. Each vendor will be requested to submit a detailed fully loaded project schedule as a component of their proposal which will allow DOEA to consider and negotiate the final timeline with the vendor. The diagram in the Exhibit below depicts a proposed phased implementation approach timeline for the enterprise CIRTS replacement project:
Exhibit 22: Recommended Project Implementation Timeline
APPENDIX I – PUBLIC SECTOR TACTICS AND MARKET TECHNOLOGY VENDORS

1.1 PUBLIC SECTOR APPROACH SUMMARIES

Given that other states with comparable elder care programs utilize similar client management enterprise-class systems and streamlined business solution processes, there is considerable experience with the required functionality and necessary experience for projects of this size, scope, and complexity.

For each state, the team conducted meetings with executive and director-level personnel responsible for their client management solution. These meetings focused on the topics of:

- Overview of the state agency and their client management system solution;
- Technology solutions chosen and the related selection process;
- Experience implementing client management systems in the public sector;
- Infrastructure (people, technology, and governance) required to successfully implement and maintain system solution;
- Benefits derived from solution;
- Advice for State entities planning to implement similar enterprise client management systems; and
- Key lessons learned and pitfalls to avoid.

Below is a list of comparable state agencies interviewed for this analysis that are using current technology to assist with providing elder care services.

<table>
<thead>
<tr>
<th>STATE AGENCY</th>
<th>CLIENT MANAGEMENT SYSTEM FEATURES</th>
</tr>
</thead>
</table>
| Alabama Department of Senior Services | - The Alabama Department of Senior Services (ADSS) is a cabinet-level agency administering programs for senior citizens and people with disabilities.  
- In 2002, ADSS replaced their outdated client management system with an in-house custom developed, web-based client management solution built on a Microsoft SQL database.  
- In 2014, PeerPlace provided Alabama's Medicaid Universal Intake Form (UIF) for all AAAs in Alabama and completed the ADRC No Wrong Door rollout to all Area Agencies on Aging. |
<table>
<thead>
<tr>
<th><strong>State Agency</strong></th>
<th><strong>Client Management System Features</strong></th>
</tr>
</thead>
</table>
| Arizona Department of Health Services, Arizona Healthy Aging (A-HA) | - In Arizona, the aging network includes the Arizona Department of Economic Security (ADES) Division of Aging and Adult Services (DAAS), eight Area Agencies on Aging (AAA), and their networks of providers. The Arizona Department of Health Services / Arizona Healthy Aging (A-HA) serves the aging population of Arizona through the Healthy Aging Communication Network (HACN) which is an A-HA initiative to build community partnerships to encourage communication on vital information, educational and evidence-based programs as resources with key partners, health professionals, the public and policy-makers.  
- A-HA utilizes a system on the Arizona Department of Administration (ADOA) Arizona Strategic Enterprise Technology’s (ASET) AZNet II to host their client management system which is built on IBM CICS enterprise application servers, BlueZone mainframe emulation for the user interface, and Control-D for online reporting. |
| California Department of Aging | - The California Department of Aging (CDA) has outsourced their client management data to service providers.  
- CDA receives aggregate data from 33 AAAs using the California Aging Reporting System (CARS) system. CARS (CA-Getcare) is a modified Commercial Off-The-Shelf (COTS) system. The purpose of CARS is to allow CDA to monitor performance data and service targeting based on federal Older Americans Act (OAA) Title III and VII B guidelines. There are 3 modules in CARS: Fiscal (web-based, monthly reporting and approval tool for expenditures and request for funds for existing OAA and Older Californians Act [OCA] Community-Based Services Programs, except Health Insurance Counseling and Advocacy Program [HICAP]), File Upload Manager (quarterly report), and NAPISCare (annual report).  
- HICAP and Title V staff use CARS and the Statewide HICAP Automated Reporting System (SHARPS), a customized COTS web-based data collection system.  
- CDA uses data in CARS when reporting statewide performance to the Administration on Aging (AoA) in the annual National Aging Program Information System (NAPIS) State Program Report (SPR).  
- In 2015, CDA contracted with PeerPlace for Statewide Health Insurance Counseling and Information Program.  
- ADRCs utilize their own client management systems.  
- For the disabled population, the California Department of Rehabilitation partners with 28 Independent Living Centers (ILC) as grant administrators as part of Disability Rights. The California Department of Vocational Rehabilitation uses the Aware electronic records management system from Alliance Enterprises to manage clients. |
<table>
<thead>
<tr>
<th><strong>STATE AGENCY</strong></th>
<th><strong>CLIENT MANAGEMENT SYSTEM FEATURES</strong></th>
</tr>
</thead>
</table>
| **Georgia Department of Human Services, Division of Aging Services** | - The [Georgia Department of Human Services, Division of Aging Services](https://www.dds.georgia.gov) (DAS) uses the Aging Information Management System (AIMS), a, consumer-centered tracking, accountability, and payment system that documents all aging services contracted between DAS, the twelve AAAs, and the network of contract service providers. DAS plans to expand the capability of AIMS to include self-direction and self-management of home and community based services.  
- AIMS is a web-based application using a relational database, maintained on an Oracle platform that provides for centralized data collection regarding planning and contracting, authorizing providers and services, tracking client data, and generating programmatic data that drives reimbursements for AAAs and service providers.  
- AIMS data is utilized to provide State Program Reports (SPR) data for Title III and VII services of the Older Americans Act which is a component of the National Aging Program Information Systems (NAPIS).  
- AIMS is nationally recognized as one of four best practice system models by the National Association of State United for Aging and Disabilities (NASUAD).  
- DAS also uses the Client Health Assessment Tool (CHAT), a standardized software used to identify and prioritize consumer long-term care needs and as a case management tool to assess and care plan for individualized client needs. CHAT is a Microsoft SQL software application designed for use by information and referral agencies that perform health assessments for their clients. |
| **New York State Office for the Aging** | - The [New York State Office for the Aging](https://www.ny.gov) (NYSOFA) mission is carried out through a network of 59 local Offices for the Aging and organizations providing home- and community-based programs.  
- NYSOFA is working with CareDirector in partnership with PeerPlace to provide a single, state-wide application to replace multiple independent applications managed by local AAAs for data collection, reporting, assessment, and case management.  
- CareDirector is based on an Oracle platform which replaced and enhanced NYSOFA’s vendor-hosted NY Connects website and state-wide NY Connects Long Term Services and Supports Resource Directory ([http://www.nyconnects.ny.gov](http://www.nyconnects.ny.gov)). This included the migration of data contained in the current Resource Directory. There are approximately 500 users across the state in 59 regional offices.  
- In 2013, NYSOFA rolled out the PeerPlace NAPIS Client Tracking System to over 2,000 users, 300 providers, and 20 AAAs.  
- The Albany Department of Health selected PeerPlace to deploy a No Wrong Door, single point of entry, automated eligibility screening and referral system. |
In 2002, the Pennsylvania Department of Aging (PDA) began using the Service Access and Management (SAM) system which was originally based on the Microsoft Access database platform. In 2011, SAM was converted from multiple Microsoft Access databases into a single instance of Microsoft SQL. In 2013, SAM data was migrated into Harmony (a subsidiary of Mediware). All PDA and AAA employees use Harmony for case management and the system was configured by PDA staff. Harmony Advanced Reporting (HAR) uses SQL Service Reporting System (SSRS) for creating reports. The system generates over 2,000 reports, 75-125 of which are used routinely and includes NAPIS and NAMRS standard reports.

1.2 TECHNOLOGY VENDORS PROVIDING ELDER CARE CLIENT MANAGEMENT SYSTEMS

Due to the recent increased demand for enterprise-class systems, flexible IT, and streamlined business solution processes by public sector organizations, there is an abundance of software vendors who specialize in the required functionality and have the necessary experience for projects of this size, scope, and complexity. Based upon the interviews and feedback from the DOEA Chief Information Officer Steve Grantham, ten vendor solutions were analyzed to provide a sample of market solutions available.

For each vendor, the project team conducted meetings with executive and director-level personnel responsible for their client management solution. These meetings focused on the topics of:

- Overview of the company and their solution approach;
- Recent experiences implementing client management systems in the public sector, particularly at comparable state agency levels;
- Market trends for client management software, including the company’s product roadmap;
- Overview of capabilities;
- Procurement strategy trends;
- Implementation strategy; and
- Support, operations, and maintenance capabilities.

The vendors listed below interviewed for this analysis are a representative market sample of solutions and services available to meet DOEA needs and requirements. While a list of the vendors’ company names was provided in Section 5 above, the vendor list below does not correspond to the order of the vendor company names listed in Section 5. The intent is to have the vendors remain anonymous.
### 1.2.1 Vendor 1 (Custom)

<table>
<thead>
<tr>
<th>Analysis Category</th>
<th>Primary Features</th>
</tr>
</thead>
</table>
▪ Hosted by [Evolve IP](https://evolveip.com) in the [Microsoft Azure](https://azure.microsoft.com) cloud.  
▪ Clustered servers are scalable and load balanced for performance. |
| **Data Conversion and Interfaces** | ▪ Data can be imported from and exported to external data sources. |
| **Application Features** | ▪ User-configurable dashboard shows risks, tasks, ongoing services, open assessments, recent activities, care and support, personal budget.  
▪ The application includes a web portal for clients and their caregivers to display summary status information on the client's care.  
▪ The Vendor can modify the system to incorporate the forms, fields, reports, etc., necessary to support DOE's workflows; some minor modifications such as modifying fields, editing reports and regulatory information could be done in-house.  
▪ All field names in the application are configurable, field names can be changed, fields can be added, drop-down menu values can be set, and for security purposes fields can be displayed or hidden based on the user's security role.  
▪ Conditional pop-up boxes and pre-defined comments can be displayed based on form selections.  
▪ Data files can be uploaded into each client’s record along with associated metadata to describe the file being uploaded.  
▪ Hyperlinks can be added to any field description.  
▪ Field data entry has spell check and can use rich text (including formatting such as bold, italic, colors, etc.).  
▪ Tablet software allows a person to sign a system-generated form electronically on the tablet. Electronic signatures can be saved for later re-use. |
| **Workflow** | ▪ The application allows for dynamic, automated workflows to be created.  
▪ Work List view shows the user’s current assignments, including in a calendar view.  
▪ Notifications about scheduled appointments, due dates, and other important events are displayed in the application but are not sent via email or text message.  
▪ Users can reassign a case to another user.  
▪ Users can copy data from an existing record, such as an assessment, into a new record.  
▪ After configuration, the application could notify an assessor which 701x forms are needed before conducting the assessment. A standard 701x PDF form can be automatically generated using field information in the client record. |
<table>
<thead>
<tr>
<th><strong>ANALYSIS CATEGORY</strong></th>
<th><strong>PRIMARY FEATURES</strong></th>
</tr>
</thead>
</table>
| **Mobile** | • Compatible with mobile devices including laptops, tablets, and smartphones (Google Android, Apple iOS and Microsoft Windows).  
• Users can save data locally on the device while disconnected from the Internet and will synchronize the data with the Microsoft SQL server when reconnected.  
• The application allows photos to be taken using a smartphone which can be uploaded into the client record.  
• The application uses Google Maps API to display locations on a map.  
• Synchronization audit history displays data synchronization attempts with the server. |
| **Security** | • Data is encrypted in transit and at rest.  
• Role-based access control by user or by group.  
• Records an audit entry when records are modified, including modified and deleted fields and the user performing the action.  
• For disaster recovery, a snapshot of the SQL virtual machine (VM) database is taken every 15 minutes. |
| **Correspondence and Reporting** | • There are several built-in canned reports. Users can create custom reports.  
• Managers can view the status of all staff-assigned cases.  
• Built-in mini-data warehouse shows the current status of all managed cases.  
• Form data captured can be exported as an Excel spreadsheet or a PDF file. |
| **Billing** | • Not capable of receiving ANSI 837 data. |

### 1.2.2 VENDOR 2 (FRAMEWORK)

<table>
<thead>
<tr>
<th><strong>ANALYSIS CATEGORY</strong></th>
<th><strong>PRIMARY FEATURES</strong></th>
</tr>
</thead>
</table>
| **Platform and Hosting** | • Cloud-based Framework solution built on Microsoft Dynamics CRM database platform with a Microsoft SQL Server back end.  
• Can be housed in the cloud, on premise, or a hybrid configuration using a combination of an on premise pass-through server and cloud servers for data storage.  
• Clustered servers are scalable and load balanced for performance. |
| **Data Conversion and Interfaces** | • Data can be imported from and exported to external data sources.  
• Uses Service Oriented Architecture (SOA) for integration with third-party solutions. |
<table>
<thead>
<tr>
<th>Analysis Category</th>
<th>Primary Features</th>
</tr>
</thead>
</table>
| **Application Features** | ▪ Supports case management activities including enrollment, assessments, care plans and notes, acuity determination, goal tracking, and outcomes for agency, community, residential and home-based services.  
▪ Uses existing SharePoint or other document management systems for file storage.  
▪ Has a consumer portal that can be used to communicate with DOEA staff, apply for eligibility online, create their personal budget, select providers, manage service delivery, and create appointments.  
▪ Has a provider portal that can be used to communicate and coordinate with providers and a provider management module that includes service authorizations, incident reports, program staff and service areas.  
▪ Can support a Resource Directory, using AIRS taxonomy, which providers can access to keep their information current.  
▪ Users are trained on system administration and configuration so they can perform system updates. |
| **Workflow** | ▪ A user-defined dashboard shows notifications, upcoming or past due assignments, ticklers, open assessments, recent activities, ongoing services, risks.  
▪ The system can generate emails, appointments and tasks using data in the system through integration with Microsoft Office 365 Outlook.  
▪ Notification triggers can be configured to alert a user about a field data value being changed.  
▪ The system can send a notification or automatically assign a task when a client enters demographic information into the system.  
▪ Non-technical staff can configure workflows to satisfy current and future business processes, data collection, and reporting requirements.  
▪ Configurable workflows and dialogs guide users through each process step and decisions.  
▪ Care plans and service authorizations can be copied from last year into the current year and will prompt the user to verify each field is correct. |
| **Mobile** | ▪ Compatible with mobile devices including laptops, tablets (Google Android and Apple iOS) and smartphones (Google Android and Apple iOS).  
▪ *Electronic* signature feature allows a person can sign using their finger on a touchscreen compatible mobile device (laptop, tablet, or smartphone).  
▪ *Digital* signature feature is available using the third-party add-on tool Topaz.  
▪ Users can take advantage of the voice-to-text feature on the phone for dictation transcription. |
| **Security** | ▪ Data is encrypted in transit and at rest.  
▪ Role-based access control by user or by group.  
▪ Audit history captures changes to fields, forms, the user making the change, when they made the change, and the last couple of changes made.  
▪ Provides disaster recovery, fault tolerance and load balancing, including redundant database instances on multiple servers. |
| **Correspondence and Reporting** | ▪ Uses SQL Server Reporting Services (SSRS) and Microsoft PowerBI for reporting.  
▪ Advanced Find feature allows creating custom views and reports.  
▪ Users must have proper role access to create and run reports. |
## ANALYSIS CATEGORY

### PRIMARY FEATURES

### Billing
- Financial management module allows documenting and billing for services rendered.
- Case managers can record service documentation and billing units simultaneously.
- Can record time by participant, in a group or by program and export to external accounting systems.
- Supports HIPAA financial transactions, batch ANSI 837 external pairs, creates invoices, generates 5010s, and ANSI 837 electronic billing and configurable paper invoices.

## 1.2.3 VENDOR 3 (FRAMEWORK)

### ANALYSIS CATEGORY

#### PRIMARY FEATURES

### Platform and Hosting
- Proprietary cloud-based Framework solution.
- Clustered servers are scalable and load balanced for performance.

### Data Conversion and Interfaces
- Data can be imported from and exported to external data sources.
- Provides an interface with MMIS systems and enrollment broker systems.
- Provides an interface with Electronic Health Records (EHR) and Health Information Exchanges (HIE), using [HL7 Continuity of Care Document](http://hl7.org) (CCD) formats, allowing client information to be pulled from and shared with providers.

### Application Features
- Has a “configuration accelerator” feature to reduce or eliminate customization allowing configuration changes by non-IT staff in minutes.
- A drag-and-drop configuration feature allows changes to forms, fields, and reports.
- Framework has multiple web services Application Programming Interfaces (API) for custom configuration, including Apex.
- Files up to 4MB can be uploaded into the client record and access can be limited by user’s security role.
- Providers can upload files.
- “Check in” button displays when a service starts and a “check out” for when the service time ends.
- System uses a [Master Data Management](http://mddg.com) model to ensure uniformity, accuracy, consistency, and accountability of data.
- When creating a scheduled calendar task, the system shows available staff and a GPS map view of the location of assigned clients.
- An optional community-based Resource Directory is available.
<table>
<thead>
<tr>
<th><strong>Analysis Category</strong></th>
<th><strong>Primary Features</strong></th>
</tr>
</thead>
</table>
| **Workflow**         | ▪ Workflows for intake and referral, assessments, eligibility and enrollment, individual service plans, scheduling, case management, electronic visit verification, electronic timesheets, program management, and financial management.  
▪ Users have a dashboard work queue that includes a message center and notification center.  
▪ Upon login, system returns user to where they were when they last logged in.  
▪ Notifications can be sent via email or text message.  
▪ Assignments are color-coded to show which cases needing immediate action, are arranged in chronological order, and can be sorted by due date.  
▪ Group queues so client cases can be shared with other case managers.  
▪ User’s dashboard can display client and provider demographic information, current medications, registration, and licensing information. |
| **Mobile**           | ▪ Compatible with mobile devices including laptops, tablets (Google Android and Apple iOS) and smartphones (Google Android and Apple iOS).  
▪ Users can work offline.  
▪ User interface has the same appearance and functionality whether being used on a desktop, laptop, tablet, or smartphone.  
▪ Clients can use an electronic signature to sign system-generated forms. |
| **Security**         | ▪ Data is encrypted in transit and at rest.  
▪ Role-based access control by user or by group.  
▪ Audit detail analysis is available through ad hoc queries or reporting.  
▪ Provides disaster recovery, fault tolerance and load balancing, including redundant database instances on multiple servers. System is FedRAMP certified and DoD Impact Level 4. |
| **Correspondence and Reporting** | ▪ Field data can be used to generate a Department-standard PDF form file.  
▪ Based on data entered, the system can notify the user of required forms.  
▪ Reporting dashboard shows client composition, total number of enrolled clients, increase in clients over time, hospitalizations, number and increase/decrease of complaints filed.  
▪ In the reporting dashboard, a user can click on values (e.g., client, provider, service area, etc.) and drill-down to subsets of search query results. |
| **Billing**          | ▪ Can submit and validate ANSI 837 data and receive an ANSI 835 in return.  
▪ Can interface and exchange data with an enrollment broker.  
▪ Details about provider rates and units can be saved for later use in a drop-down menu selection.  
▪ Billing validations are built in; for example, a provider dedicated to one area can’t bill for a different service area. |
### 1.2.4 Vendor 4 (Framework)

<table>
<thead>
<tr>
<th>Analysis Category</th>
<th>Primary Features</th>
</tr>
</thead>
</table>
| **Platform and Hosting**           | - Proprietary cloud-based Framework solution built on a Microsoft SQL Server platform.  
- Clustered servers are scalable and load balanced for performance.                                                                                     |
| **Data Conversion and Interfaces** | - Data can be imported from and exported to external data sources.  
- Can interface with various legacy and external systems.  
- Can interface with Electronic Health Record (EHR) systems.                                                                                             |
| **Application Features**           | - Client demographic screen displays client’s information, map of their location, notes field, and cases open at the client’s location, e.g., a nursing home.  
- Document management leverages existing network drive folders or SharePoint.  
- Provides chat feature.  
- Tracks and manages waiver information and status.  
- Most standard fields can be configured and new fields can be added.  
- Dashboard agenda view displays a list view of assignments, activity view displays icons to indicate type of activity, and color-coded calendar view to display if appointments are overdue. |
| **Workflow**                       | - Integrated text messaging and notification system notifies users of project, assignment and schedule information and changes. These notifications appear through both the mobile app and web interface.  
- Dashboard displays a case worker’s current assignments.  
- Email or text notifications and alerts based on triggers (field value changes, status changes, etc.). |
| **Mobile**                         | - Compatible with mobile devices including laptops, tablets (Google Android and Apple iPads), and smartphones (Google Android and Apple iOS).  
- Provides GPS location services to optimize travel routes and provide managers the ability to track and report on employee travel.  
- Supports the use of digital signatures and electronic signatures allowing clients or providers to handwrite their signature on a touchscreen device such as a tablet or smartphone.  
- Voice-to-text case notes on mobile devices and annotation of photos. |
| **Security**                       | - Data is encrypted in transit and at rest.  
- Role-based access control by user or by group.  
- Audit history of activity to the field level.  
- Provides disaster recovery, including redundant database instances on multiple servers.                                                                 |
| **Correspondence and Reporting**   | - Predictive analytics feature provides access to real-time data to track and trend activities, spending, compliance, personnel performance and vendor metrics, ensure assignments and projects are achieving desired results and per defined business rules, and measure compliance to established business rules and receive deviation alerts.  
- Provides the ability to generate canned reports via drop-down menu field selections. |

*Market Analysis Report*
## Analysis Category

### PRIMARY FEATURES

**Billing**
- Provides the ability to exchange claims data using Medicaid EDI standards, including receiving ANSI 837 data.
- Provides oversight, process automation and governance in managing service provider, vendor and independent contractor/1099 related services, cases, deliveries and supporting activities.

### Vendor 5 (COTS)

#### 1.2.5 ANALYSIS CATEGORY

### PRIMARY FEATURES

**Platform and Hosting**
- Cloud-based COTS system built on Oracle Application Server 10g and Forms 6i, using Microsoft SQL Server, running on SUSE Linux Enterprise 11 Server.
- Clustered servers are scalable and load balanced for performance.

**Data Conversion and Interfaces**
- Data can be imported from and exported to external data sources.
- Vendor has already developed interfaces with several organizations including APD Consumer Directed Care+, AHCA FMMIS, DCF Florida Safe Families Network (FSFN), DEO and DOR employment data, DFS FLAIR financial data, and DOH Office of Vital Statistics data.
- Provides interfaces with Electronic Health Record (EHR) systems.

**Application Features**
- Can incorporate DOEA's Rule-based algorithm.
- Assessment Design feature allowing the creation and automation of any Department-standard form.
- Optional public-facing online AIRS-compliant resource directory and ADRC call center features.
- Interfaces with MapQuest so appointments can be scheduled in distance order thereby minimizing travel time.

**Workflow**
- Configurable workflow features for intake processes, tracking referrals, and providing outcome documentation.
- Needs identified during the assessment process can automate the creation of a care plan and recommend services.
- interRAI Instruments assessment and algorithms built into workflows to determine eligibility, assess care needs, and create care plans.
- Users can create their own time-sensitive tasks and ticklers that will automatically notify users at the appropriate time.

**Mobile**
- Compatible with mobile devices including laptops, tablets (Google Android and Apple iPads), and smartphones (Google Android and Apple iOS).
- Field office managers can send out communications to all assessors in the field through their mobile device.
- Mobile GPS data is captured for analysis purposes.

**Security**
- Data is encrypted in transit and at rest.
- Role-based access control by user or by group.
- Audit history of activity to the field level using ADAudit Plus.
- Provides disaster recovery, including redundant database instances on multiple servers.
### Correspondence and Reporting
- Reporting through Oracle Report Builder 6i and uses SQL Server Reporting Services (SSRS) to generate reports including NAPIS and NORS reports.
- Provides an executive dashboard for overall program performance measures and ad hoc reporting.
- A series of interactive, visual dashboards can display actionable data sets for key program metrics.
- Real-time reporting capability of user task performance using graphical dashboards and user task queues.

### Billing
- Providers can submit ANSI 837 claims data which can be pre-adjudicated based on pre-defined Department business rules.
- Providers receive instant remittance results upon submitting claims.

### 1.2.6 VENDOR 6 (CUSTOM)

#### Platform and Hosting
- Cloud-based custom solution built on an Oracle platform.
- Hosted in Oracle cloud.
- Clustered servers are scalable and load balanced for performance.

#### Data Conversion and Interfaces
- Data can be imported from and exported to external data sources.
- Interfaces with common database platform and creates multi-masters so records can be updated in multiple locations.
- Interfaces with Electronic Health Record (EHR) systems.

#### Application Features
- Document Cloud Service support document management by allowing users to attach files to client records which can then trigger a workflow process.
- Forms tool to generate Department-standard PDF forms pre-populated with field data.
- Live chat capability.

#### Workflow
- Case worker dashboard and built-in workflow automation.
- Standard email responses can be programmed to be automatically sent based on field values or other triggers in the system.
- Attaching files to client records can trigger a workflow process.

#### Mobile
- Compatible with mobile devices including laptops, tablets (Google Android and Apple iPads), and smartphones (Google Android and Apple iOS).
- Provides GPS location services to optimize travel routes and provide managers the ability to track and report on employee travel.
- Supports the use of electronic signatures allowing clients or providers to handwrite their signature on a touchscreen device such as a tablet or smartphone.

#### Security
- Data is encrypted in transit and at rest.
- Single-Sign On capability that can integrate with Microsoft Office 365.
- Role-based access control by user or by group.
- Audit history of activity to the field level.
- Provides disaster recovery, including redundant database instances on multiple servers.
### PRIMARY FEATURES

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>PRIMARY FEATURES</th>
</tr>
</thead>
</table>
| **Correspondence and Reporting** | ▪ Built-in canned reports can be scheduled to run.  
▪ Advanced analytics, reporting, and charting features.  
▪ Reports can be exported as PDF, Excel, HTML, and other common file formats.  
▪ Data visualization tools can report on data from external systems. |
| **Billing**               | ▪ Optional add-on component supports the import, processing, and release of claims.                                                              |

### 1.2.7 VENDOR 7 (COTS)

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>PRIMARY FEATURES</th>
</tr>
</thead>
</table>
| **Platform and Hosting**  | ▪ Cloud-based COTS solution built on an IBM DB2 platform using Oracle Java and Java Enterprise Edition.  
▪ Hosted in the Amazon Web Services (AWS) cloud and uses Microsoft Azure for SQL services and Data Warehouse.  
▪ Clustered servers are scalable and load balanced for performance. |
| **Data Conversion and Interfaces** | ▪ Data can be imported from and exported to external data sources.  
▪ Uses Master Data Management to synchronize identities, de-duplicate data, and perform internal and external data acceptance testing and validation.  
▪ Interfaces with Electronic Health Record (EHR) systems. |
| **Application Features**  | ▪ Case worker dashboard and workflow automation.  
▪ Forms tool to generate Department-standard PDF forms pre-populated with field data that can be printed or emailed.  
▪ Internal messaging system allowing users to set alerts in their home dashboard or send alerts to other users.  
▪ Check in/Check out feature allows Department-standard forms to be saved securely on the mobile device, completed, and synchronized with the system.  
▪ Senior Rx is used to populate medication drop-down lists in the system and includes medications, doses, frequency, prescriber, and associated diagnosis using SNOMED diagnosis codes. |
| **Workflow**              | ▪ Over 30 configurable workflow components including case management, intake, registration, and information and referral.  
▪ User portal has notifications, tickler reminders, and push pins for returning to where the user left off before logging out of the system.  
▪ Upon referral, a user’s portal page queue can indicate new referrals or an email notification can be automatically sent. |
| **Mobile**                | ▪ Compatible with mobile devices including laptops, tablets (Google Android and Apple iPads), and smartphones (Google Android and Apple iOS).  
▪ Mobile apps for meal delivery expected in Summer 2017 and intake and referral expected Fall 2017.  
▪ System captures Electronic Visit Verification data to assist supervisors with validating work performance. |
<table>
<thead>
<tr>
<th>Analysis Category</th>
<th>Primary Features</th>
</tr>
</thead>
</table>
| Security          | - Data is encrypted in transit and at rest.  
|                   | - Files can be transferred using dedicated Secure File Transfer Protocol (SFTP) server.  
|                   | - When form files are checked out, downloaded, and completed by a user, the record is locked in the system, encrypted after downloading, and can be checked in and uploaded back into the client record.  
|                   | - Role-based access control by user or by group.  
|                   | - Audit history of activity to the field level.  
|                   | - Provides disaster recovery, fault tolerance and load balancing, including redundant database instances on multiple servers.  |
| Correspondence and Reporting | - Several canned reports built in.  
| | - Custom ViewBuilder tool which can be exported to Microsoft Excel spreadsheet format, SQL Server Reporting Services (SSRS), or Microsoft Report Builder.  
| | - Uses Online Analytical Processing (OLAP) and data mart for reporting.  
| | - Compliant with Federal and State reporting standards including NAPIS, NAMRS, NORS, SART, SRT and ORT. If reporting laws change, updates are made at no charge.  |
| Billing | - Built-in client and provider billing features.  
| | - System can also manage split funding.  
| | - Can process ANSI 837 data.  
| | - Records audit trails and error logs for all EDI transactions.  |

### 1.2.8 VENDOR 8 (CUSTOM)

<table>
<thead>
<tr>
<th>Analysis Category</th>
<th>Primary Features</th>
</tr>
</thead>
</table>
| Platform and Hosting | - Cloud-based custom solution built on Microsoft SQL Server and Microsoft .NET core code.  
| | - Hosted in the Microsoft Azure Government cloud.  
| | - Clustered servers are scalable and load balanced for performance.  |
| Data Conversion and Interfaces | - Data can be imported from and exported to external data sources.  
| | - Interfaces with Electronic Health Record (EHR) systems.  |
| Application Features | - Integrates with Microsoft Office 365 environments using Microsoft Outlook for calendaring and scheduling and SharePoint for document storage.  
| | - Users can upload multiple files at once and enter metadata about the file contents during upload.  
| | - Uses Microsoft Outlook to create and send automated notifications.  
| | - Provides the ability to create a new form, field, or drop-down menu list.  
| | - An Application Programming Interface (API) is available at the application layer.  |
## Analysis Category

### Primary Features

<table>
<thead>
<tr>
<th>Analysis Category</th>
<th>Primary Features</th>
</tr>
</thead>
</table>
| **Workflow**      | - Workflows can be configured by the vendor based on DOEA business rules.  
                  | - The case management module allows a user to transfer their client caseload to another user.  
                  | - Uses Microsoft Flow to create workflow automation.  
                  | - For workflows, C# code is automatically generated which can be further modified by developers. |
| **Mobile**        | - Compatible with mobile devices including laptops, tablets, and smartphones (Google Android, Apple iOS, and Microsoft Windows).  
                  | - Mobile users can work offline.  
                  | - Message store-and-forward allows emails to be sent after reconnecting to the internet. |
| **Security**      | - Data is encrypted in transit and at rest.  
                  | - Uses Microsoft Windows Active Directory for auditing, authentication, and authorization.  
                  | - Role-based access control by user or by group.  
                  | - Audit history of activity to the user, form and field level using JavaScript Object Notation (JSON) and Extensible Markup Language (XML).  
                  | - Provides disaster recovery, fault tolerance and load balancing, including redundant database instances on multiple servers. |
| **Correspondence and Reporting** | - Uses Microsoft Power BI for business intelligence analytics reporting and Sway to create interactive reports and presentation.  
                                      | - Data can be exported in Microsoft Excel format. |
| **Billing**       | - Billing interfaces would need to be developed by the vendor to accommodate DOEA business rules. |

### 1.2.9 Vendor 9 (Custom)

<table>
<thead>
<tr>
<th>Analysis Category</th>
<th>Primary Features</th>
</tr>
</thead>
</table>
| **Platform and Hosting** | - Cloud-based custom solution built on Microsoft SQL Server.  
                         | - Hosted in the Microsoft Azure cloud.  
                         | - Clustered servers are scalable and load balanced for performance. |
| **Data Conversion and Interfaces** | - Data can be imported from and exported to external data sources.  
<pre><code>                                  | - Application Programming Interface (API) which can integrate and interface with external systems. |
</code></pre>
<table>
<thead>
<tr>
<th>Analysis Category</th>
<th>Primary Features</th>
</tr>
</thead>
</table>
| **Application Features** | • Drop-down list items are easily configurable.  
• Fields can be optional or required, preventing a user from saving a form unless the required fields are filled out.  
• Configuration changes can be deployed into production and users are notified of the new update when they log into the system.  
• Data in the system can be sent to email, FTP site, via HTTP file upload, or Web-Based Distributed Authoring and Versioning (WebDAV).  
• Uploaded files can be stored in Box, Microsoft OneDrive or Microsoft SharePoint. Files can be automatically converted to PDF format and uploaded into SharePoint.  
• For case management, standard case note responses can be configured to be filled in at the click of a button.  
• Users can share any attached files within the system.  
• Visual drag-and-drop web browser interface for creating and editing forms and workflows. |
| **Workflow** | • The user dashboard includes Forms (available forms based on user role), Inbox (current assigned tasks), Drafts (incomplete items) and Sent (items sent from Inbox) views.  
• Case management views available include: List (of clients), Due Date (when assignments are due), Priority (assignments ranked according to priority), and Map (map with pins showing each client location).  
• Workflow can be configured to take a user to a form they must approve.  
• To reassign a client to a different case worker, user selects client record and types in the new assignee.  
• A sent form can trigger a text alert. |
| **Mobile** | • Compatible with mobile devices including laptops, tablets, and smartphones (Google Android, Apple iOS and Microsoft Windows).  
• Works on mobile devices when offline.  
• User interface on mobile devices looks and works the same as on a desktop or laptop computer.  
• Mobile application has dispatch capability displaying a daily summary of pre-populated client case information in preparation for a site visit.  
• Assigned Tasks view displays client locations on a GPS map.  
• Photos, including date and time taken, can be taken on a smartphone, edited, cropped, and annotated before saving in the client record.  
• Client case notes can be translated from voice to text using a smartphone. |
| **Security** | • Data is encrypted in transit and at rest.  
• Role-based access control by user or by group.  
• For audit purposes, the last user activity is maintained for reference but not prior changes.  
• Provides disaster recovery, fault tolerance and load balancing, including redundant database instances on multiple servers. |
<table>
<thead>
<tr>
<th><strong>ANALYSIS CATEGORY</strong></th>
<th><strong>PRIMARY FEATURES</strong></th>
</tr>
</thead>
</table>
| **Correspondence and Reporting** | - Built-in reports are not provided but users can create ad hoc reports using Birst Networked Analytics and Business Intelligence Platform.  
- A user's daily dashboard displays assignments and case status.  
- The reporting interface displays data in the form of graphs, hover-over metadata, lists, outcomes by time period, or other types of dynamic reporting.  
- An email summary of assignments and case status can be routinely sent to supervisors.  
- Data in charts or graphs can be exported to Excel. |
| **Billing** | - Capable of processing billing but not for Medicare or Medicaid. |

### 1.2.10 VENDOR 10 (COTS)

<table>
<thead>
<tr>
<th><strong>ANALYSIS CATEGORY</strong></th>
<th><strong>PRIMARY FEATURES</strong></th>
</tr>
</thead>
</table>
| **Platform and Hosting** | - Proprietary cloud-based COTS solution built on Oracle Real Application Clusters (RAC).  
- Clustered servers are scalable and load balanced for performance. |
| **Data Conversion and Interfaces** | - Data can be imported from and exported to external data sources.  
- Provides the ability to develop an automated template to facilitate data migration into back end database. |
| **Application Features** | - Can incorporate DOEA’s Rule-based algorithm.  
- Drop-down lists are configurable to fit DOEA standards.  
- Files and photos up to 10MB can be uploaded into a client record.  
- Document storage module that allows a user to include metadata regarding file uploaded.  
- Field data in the system can be used to generate Department-standard PDF forms.  
- Includes a built-in medications database from First DataBank providing data including pharmaceuticals, dosages, administration frequency, allergies, interactions, and photo description. |
| **Workflow** | - Configurable workflows are based on a user’s role allowing the user to submit, review or approve and can route an approval through multiple approvers in a specific order.  
- Notifications can be sent to a user within the system dashboard, or sent via email or text message.  
- Based on the type of service selected, the system can display only those providers that provide the selected service. |
| **Mobile** | - Compatible with mobile devices including laptops, tablets, and smartphones (Google Android, Apple iOS, and Microsoft Windows).  
- Assessments can be conducted using any mobile device even when offline.  
- Data cannot be stored while offline to prevent HIPAA Protected Health Information (PHI) and other confidential information from being stored on the mobile device unencrypted. |
### Security
- Data is encrypted in transit and at rest.
- Notifications sent to a user within the system dashboard, email or text message are designed to exclude HIPAA Protected Health Information (PHI) as end device may not be encrypted.
- User can be assigned over 100 different security roles based on their job duties and what they should access.
- Case managers can share their client caseloads with others as needed.
- For audit purposes, the last user activity is maintained for reference but not prior changes.
- Role-based access control by user or by group.
- User actions in the system are captured in each saved form’s audit tracking table showing which user made which change using which IP address and web browser.
- Provides disaster recovery, fault tolerance and load balancing, including redundant database instances on multiple servers.

### Correspondence and Reporting
- Correspondence is automatically generated using data in the system.
- Uses the Oracle Business Intelligence tool to provide built in reports.
- For optimal system performance, reporting is performed through a separate data warehouse.

### Billing
- Providers can bill AAA offices directly using Medicaid EDI standard formatting.
- System can send ANSI 835 forms and receive ANSI 837 forms in return.

## APPENDIX II – FUNCTIONALITY OF DOEA CORE PROCESSES

The table below list DOEA core processes and provides a brief description of each.

<table>
<thead>
<tr>
<th>Analysis Category</th>
<th>Primary Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intake</strong></td>
<td>The method in which CARES processes referrals, including the sources from which cases are received and the requirements for accepting cases. Referrals for ICP assessments are accepted from any source and by any means of transmission – fax, mail, courier, walk-in, email or telephone.</td>
</tr>
<tr>
<td><strong>On-site Assessment</strong></td>
<td>A visit to the location where a client is currently residing (home, hospital, nursing facility, etc.) to obtain client assessment or follow-up information. To be considered an on-site visit the client must be interviewed or seen at time of assessment or follow-up.</td>
</tr>
<tr>
<td><strong>Medical Case-file Review for Initial Referrals</strong></td>
<td>Also known as a Desk Review – When face-to-face client contact is not required, this file review involves the examination of medical records by a CARES Assessor, Registered Nurse Specialist, and/or Physician Consultant in the process of determining level of care.</td>
</tr>
<tr>
<td><strong>ANALYSIS CATEGORY</strong></td>
<td><strong>PRIMARY FEATURES</strong></td>
</tr>
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</tr>
<tr>
<td><strong>Staffing Process</strong></td>
<td>An interdisciplinary team meeting of CARES professional staff, Program Operations Administrator, CARES Physician Consultant and/or Registered Nurse Specialist to review medical documentation and assessment information for CARES' clients. The purpose of staffing is to determine appropriate and correct Level of Care, program recommendation, and placement recommendation.</td>
</tr>
<tr>
<td><strong>Recommended Placement – Community Services</strong></td>
<td>Placement recommendations will be based on the client's current living situation, and/or their potential to safely return or remain in the community. CARES staff will recommend placements that are the least restrictive, most appropriate living situation in which the individual can receive needed care and services.</td>
</tr>
<tr>
<td><strong>Recommended Placement – Temporary Nursing Facility Placement</strong></td>
<td>An individual in need of a temporary stay in a nursing facility or rehabilitation center who has potential for returning to the community. A client in a temporary placement who returns to the community is considered in an alternative placement at the time of return to the community.</td>
</tr>
<tr>
<td><strong>Recommended Placement – Long Term Nursing Facility Placement</strong></td>
<td>A nursing facility, assisted living facility, intermediate care facility for the developmentally disabled or tuberculosis hospital participating in the Medicaid program.</td>
</tr>
<tr>
<td><strong>Follow-Up Schedule – Community Services Recommendation</strong></td>
<td>Enrollees residing in a nursing facility who transition into the community with assistance from the LTC Plan will have their eligibility revised from ICP to home and community-based services (HCBS) eligibility.</td>
</tr>
<tr>
<td><strong>Follow-Up Schedule – Temporary Nursing Facility Recommendation</strong></td>
<td>Follow-up for nursing facility residents who have Temporary Level of Care recommendations. For Temporary Nursing Facility Placement (code NHTP) recommendations, the follow-up schedule is 30 and 90 days.</td>
</tr>
<tr>
<td><strong>Follow-Up Schedule – Long-Term Care Nursing Facility Recommendation</strong></td>
<td>Follow-ups are completed to evaluate the progress of individuals as it relates to Level of Care criteria and community potential. Follow-ups will be completed at 30 and 90 days based on the most recent staffing date.</td>
</tr>
<tr>
<td><strong>Pre-Admission Screening &amp; Resident Review</strong></td>
<td>An extensive, individualized in-depth evaluation of the individual to confirm or rule out a suspected diagnosis of SMI, ID or both. The Level II Evaluation is also used to determine whether nursing facility services and specialized services are needed. The Office of Substance Abuse and Mental Health (SAMH) or its designee is responsible for determining the need for specialized services for individuals suspected of having SMI and if nursing facility placement is appropriate. The Agency for Persons with Disabilities (APD) is responsible for determining the need for specialized services for individuals suspected of having ID and if nursing facility placement is appropriate. See 42 CFR 483.112 and 42 CFR 483.130.</td>
</tr>
</tbody>
</table>
## Analysis Category

<table>
<thead>
<tr>
<th>PRIMARY FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New Admission Review</strong></td>
</tr>
<tr>
<td>Discuss case with the facility staff, determine date of admission, review resident's chart, and obtain copies of pertinent medical or social information related to determining Level of Care.</td>
</tr>
<tr>
<td><strong>Nursing Home Intake</strong></td>
</tr>
<tr>
<td>The method in which CARES processes referrals, including the sources from which cases are received and the requirements for accepting cases. Referrals for ICP assessments are accepted from any source and by any means of transmission – fax, mail, courier, walk-in, email or telephone.</td>
</tr>
<tr>
<td><strong>Care Plans</strong></td>
</tr>
<tr>
<td>An individualized written plan of care that identifies the assessed needs of a client and how the needs will be met with the provision of services. The care plan includes the services, duration, frequency, and provider of the services.</td>
</tr>
</tbody>
</table>