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GOVERNOR

DEPT. COMM. NO. 4

DOUGLAS MURDDOCK
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September 10, 2019

The Honorable Ronald D. Kouchi,
President, and
Members of The Senate
Twenty-Ninth State Legislature
Hawaii State Capitol, Room 409
Honolulu, Hawaii 96813

The Honorable Scott K. Saiki,
Speaker, and
Members of The House of Representatives
Twenty-Ninth State Legislature
Hawaii State Capitol, Room 431
Honolulu, Hawaii 96813

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

Pursuant to HRS section 27-43.6, which requires the Chief Information Officer to submit applicable independent verification and validation (IV&V) reports to the Legislature within ten days of receiving the report, please find attached the IV&V report the Office of Enterprise Technology Services received for the State of Hawaii Department of Labor& Industrial Relations Disability Compensation Division's Modernization Project – Electronic Case Management System.

In accordance with HRS section 93-16, this report may be viewed electronically at http://ets.hawaii.gov (see "Reports").

Sincerely,

Douglas Murdock (Sep 12, 2019)

DOUGLAS MURDOCK
Chief Information Officer
State of Hawai'i

Attachment (1)

STATE OF HAWAII
DEPARTMENT OF LABOR &
INDUSTRIAL RELATIONS (DLIR)

Disability Compensation Division's Modernization Project – Electronic Case Management System (eCMS)

INITIAL ON-SITE IV&V REVIEW REPORT

August 30, 2019 | Version 1.0

DRAFT SUBMITTED

July 15, 2019

QUALITY.
INTEGRITY.
INSIGHT.

ACcuity LLP
CERTIFIED
PUBLIC
ACCOUNTANTS

An independent member of bakertilly INTERNATIONAL

Table of Contents

Document History

DATE	DESCRIPTION	AUTHOR	VERSION
07/15/19	Initial On-site IV&V Report Draft created	Julia Okinaka	0.0
08/30/19	Initial On-site IV&V Report updated with DLIR comments (See Appendix D: Comment Log on Draft Report)	Julia Okinaka	1.0

EXECUTIVE SUMMARY

BACKGROUND

The State of Hawaii, Department of Labor and Industrial Relations (DLIR) contracted DataHouse Consulting, Inc. (DataHouse) for the Disability Compensation Division's (DCD) Electronic Case Management System Project (eCMS Project) on August 27, 2018. DLIR contracted Accuity LLP (Team Accuity) to provide Independent Verification and Validation (IV&V) services for the eCMS Project on April 5, 2019.

The goal of IV&V is to increase the probability of project success. The benefits of IV&V include identification of high-risk areas early and actionable recommendations. Our IV&V approach includes conducting interviews, observing project activities, reviewing project artifacts, and utilizing IV&V checklists based on industry standards and best practices.

This Initial IV&V Report summarizes the results of the IV&V activities performed for the period April 5, 2019 through June 30, 2019 and provides an objective initial assessment of project health at this stage in the project. Periodic IV&V assessment reports will be issued on a monthly basis beginning October 2019 through June 2021 to update and evaluate continual project progress and performance.

The focus of our IV&V activities for this initial assessment was to quickly assess the project's current status, understand the technical solution, and evaluate project execution to date. Our assessment was performed in three major areas: Program Governance, Project Management, and Technology.

The IV&V Dashboard on the following page provides a quick visual snapshot of both the project status and project assessment as of June 30, 2019. The written analysis below and following the dashboard provide additional clarity and explanation.

PROJECT SUCCESS

"Coming together is a beginning; keeping it together is progress; working together is success."

-Henry Ford

PROJECT STATUS

The eCMS Project is a three-phased project and is currently in Phase 1: eCMS Foundation and Notes Migration. Phase 1 includes the development of two solution components referred to as Content Management and Case Management. The Phase 1 requirements documents and Content Management Design document were approved, while the Case Management design document is in progress.

On June 25, 2019, DLIR received notification that the Department of Human Services (DHS) will not allow the eCMS Project to utilize the DHS's IBM FileNet environment as described in DataHouse's Best and Final Offer (BAFO) (refer to finding 2019.07.IT01). As the proposed Content Management hosting infrastructure solution is not feasible, DataHouse is currently evaluating and selecting an alternative solution to present to DLIR for review and approval.

The IV&V Dashboard on the following page was designed to display key budget and schedule information to summarize the current project status. However, we were unable to get total project progress (percentage complete shown for Phase 1 only) and total project costs (DataHouse payments shown only). Additionally, the project schedule and go-live dates shown on the IV&V Dashboard were based on the project plan prior to the recent DHS development. The project schedule, go-live dates, and project budget will need to be reassessed and most likely revised for the alternative solution. This may include revisiting completed tasks and deliverables.

PROJECT ASSESSMENT

AS OF JUNE 30, 2019

SUMMARY RATINGS

OVERALL RATING

R

Significant severe deficiencies were observed requiring immediate remediation or risk mitigation.

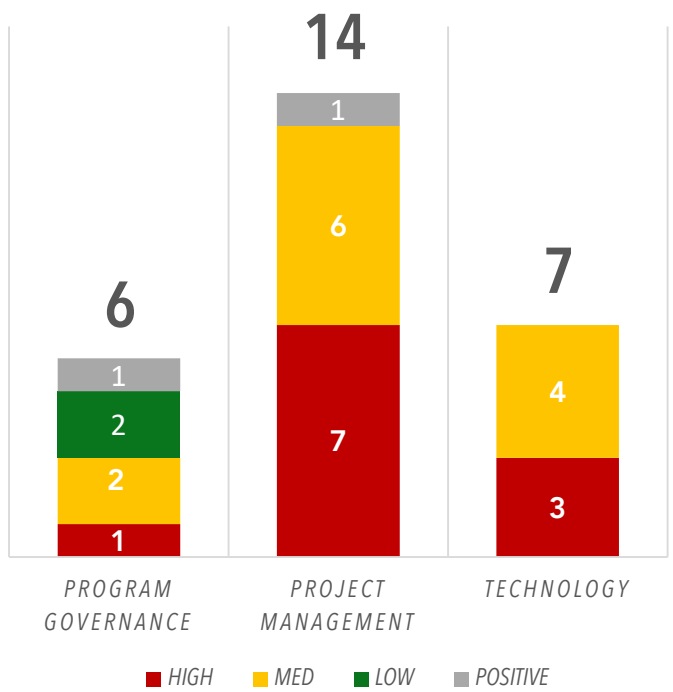
PROGRAM GOVERNANCE	Y
PROJECT MANAGEMENT	R
TECHNOLOGY	R

CRITICALITY RATINGS

R	Y	G	NA
HIGH	MEDIUM	LOW	N/A

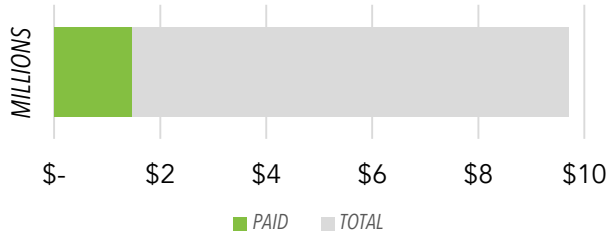
27 OPEN FINDINGS

SEVERITY LEVELS BY ASSESSMENT AREA



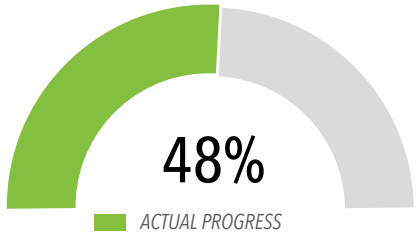
46 OPEN RECOMMENDATIONS

PROJECT BUDGET*

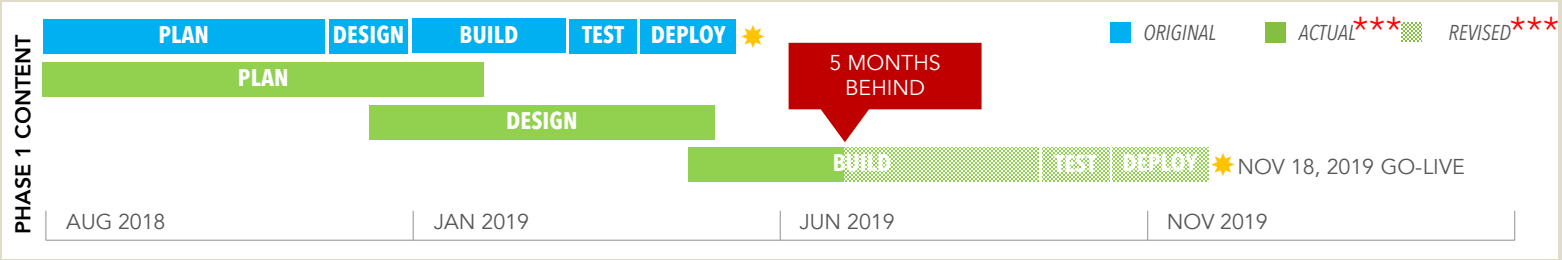


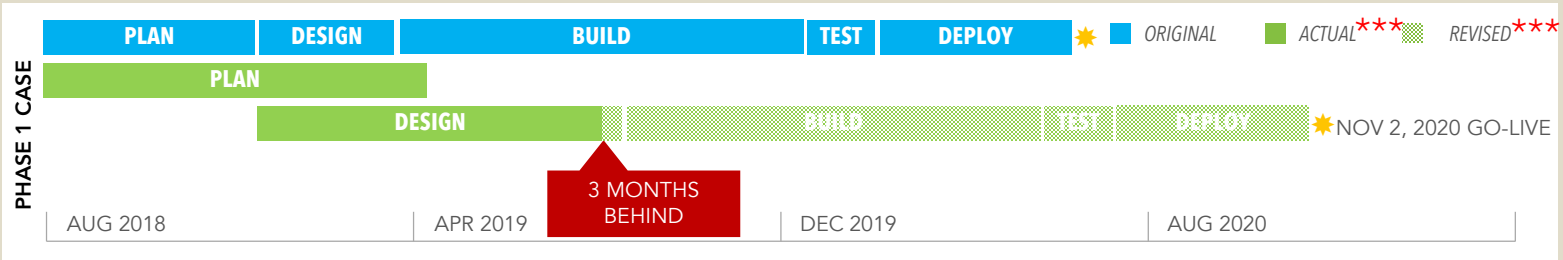
* Only includes DataHouse contract.

PROJECT PROGRESS (PHASE 1)**



** Only for Phase 1. IV&V unable to verify %.





*** Has not yet been revised to reflect the impact of the recent DHS development.

PROJECT ASSESSMENT

The IV&V Dashboard on the previous page summarizes our assessment of the eCMS Project including the criticality ratings (see Appendix A: IV&V Criticality and Severity Ratings), findings, and recommendations.

An overall project red (high) criticality rating is based on our assessment of the need to resolve the following three items prior to moving forward in the project:

1. Carefully evaluate and select an alternative solution.
With the recent development that the eCMS Project will not be able to utilize the DHS IBM FileNet environment as planned, a thorough analysis should be performed to evaluate all possible total solution alternatives. The analysis should include consideration and comparison of criteria such as system performance, impacts to the project schedule, and project and long-term operational costs. DLIR should perform adequate due diligence before making any decisions. This will help to minimize further unplanned delays and ensure that the delivered system will meet operational and stakeholder requirements. Refer to finding 2019.07.IT01.

2. Set clear and measurable goals and success metrics.
Broad project goals have been set, however, it is difficult to evaluate what level of improvement or benefits need to be achieved to make the project successful. DLIR should set clear and measurable goals and success metrics to help the project team, project governance, and stakeholders objectively evaluate the performance of the project, the contractor, and the technical solution. Refer to finding 2019.07.PG05.

3. Formalize key project management processes.
Many of the project management activities occur in a more informal and reactive manner. While we understand that formal plans and processes are not practical in all project management areas given limited time and resources, there are several key areas where additional planning and consideration for a more formalized approach will help to significantly increase probability of project success. These areas include requirements management, risk and issue management, and communication management. As a part of formalizing the processes, a clear understanding of roles and responsibilities between DLIR and DataHouse is also necessary. Refer to findings 2019.07.PM02, 2019.07.PM06, 2019.07.PM07, 2019.07.PM09, and 2019.07.PM10.

Team Accuity believes that at a minimum, the three items listed above must be addressed immediately to set the project on a clear course forward. This Initial IV&V Report describes in detail all of the 27 findings that we have identified as well as our 46 recommendations that should be addressed. Both DLIR and DataHouse are already in the process of implementing changes based on IV&V recommendations that were informally made throughout the assessment period. However, it is essential that DLIR and DataHouse come together to decide on a comprehensive corrective action plan to move forward.

It is important to note that the criticality and severity ratings were influenced by the timing in which this initial assessment was performed and reported on. Findings were assessed a greater degree of severity as it is almost eleven months into the project and there is a more immediate need for many of these problems to have already been ironed out. Additionally, the issuance of this report follows closely behind the recent DHS development which has put the project in a period of significant uncertainty until critical decisions are made.

While the project has areas that need significant improvement, the eCMS Project is fortunate to have an active and engaged DLIR Project Sponsor, a dedicated DLIR Project Manager, and knowledgeable DLIR Subject Matter Experts (SME) who are all making valuable contributions to the project. A continued focus on project success will help to drive progress and elevate project performance.

AT-A-GLANCE

Resolve **BEFORE** moving forward

Perform **ADEQUATE** due diligence

Set **MEASURABLE** success metrics

FORMALIZE processes

Focus on project **SUCCESS**

OVERVIEW

PROJECT BACKGROUND

The State of Hawaii, Department of Labor and Industrial Relations (DLIR) contracted DataHouse Consulting, Inc. (DataHouse) for the Disability Compensation Division's (DCD) Electronic Case Management System Project (eCMS Project) on August 27, 2018.

The eCMS Project will modernize DCD's current systems and processes for three main DCD programs including Workers' Compensation (WC), Temporary Disability Insurance (TDI), and Prepaid Healthcare (PPH). The new system replaces and consolidates information from four of DCD's existing systems, Disability Compensation Information system (DCIS), Xerox DocuShare, IBM Lotus Notes Domino Case Management, and Lotus 1-2-3, into one comprehensive solution called eCMS.

The eCMS Project includes the development of two solution components referred to as Content Management and Case Management. The three phases of the eCMS Project include:

- Phase 1: eCMS Foundation and Notes Migration (July 1, 2018 – June 30, 2020)
- Phase 2: DCIS Migration (July 1, 2020 – June 30, 2021)
- Phase 3: Portal (July 1, 2021 – June 30, 2022)

PROJECT STATUS

The eCMS Project is almost eleven months into Phase 1. The Phase 1 requirements documents and Content Management Design document were approved, while the Case Management design document is in progress.

DataHouse's Best and Final Offer (BAFO) included a solution that would leverage the existing enterprise IBM FileNet environment at the State of Hawaii, Department of Human Services (DHS). DataHouse has been working with DHS on a Memorandum of Understanding (MOU), however, on June 25, 2019, DLIR received notification that DHS will not allow the eCMS Project to utilize the DHS's IBM FileNet environment (refer to finding 2019.07.IT01). As the Content Management hosting infrastructure solution is not feasible, DataHouse is currently evaluating and selecting an alternative solution to present to DLIR for review and approval.

Although the project schedule will need to be revised for the alternative solution, the eCMS Project has already experienced several delays to date. The Phase 1 Content Management is about five months behind schedule and the original go-live date of May 2019 was revised three times with the current go-live date as November 2019. The Phase 1 Case Management is about three months behind schedule and the original go-live date of June 2020 was revised to November 2020. Some of the reasons for the delays provided by the eCMS Project team include additional time for requirements gathering, some Phase 2 work that was moved up to Phase 1, late completion of deliverable approvals, and delayed procurement of scanners. Since schedule changes are not formally documented or approved, we were unable to verify the root causes for the delays (refer to finding 2019.07.PM13).

We are unable to report on total project costs to date as a comprehensive project budget is not prepared. The DataHouse contract payments are tracked and are within the total budgeted amounts, however, we were unable to assess the reasonableness of the timing and the invoice amounts due to unclear contract payment terms (refer to finding 2019.07.PM12). Costs of the alternative solution and an interface solution are still unknown.

The overall project progress of the eCMS Project is not clear at this time. DataHouse provided the percentage of completion for Phase 1 only. Additionally, the alternative solution will most likely require additional work and some of the tasks and deliverables already completed may need to be revisited. IV&V will evaluate the updated project schedule for accuracy and completion in the next report.

PROJECT STATUS

11 months into **PHASE 1**

Schedule **DELAYS** and revised go-live dates

COMPREHENSIVE project budget not available

Proposed solution **NOT VIABLE**

Impact of alternative solution **UNCERTAIN** at this time

IV&V BACKGROUND

On April 5, 2019, Accuity LLP (Team Accuity) was contracted by DLIR, Contract No. 67903, to provide IV&V services for the eCMS Project through June 30, 2021. The goal of IV&V is to increase the probability of project success. Project success includes factors such as staying on schedule and on budget, achieving project goals, meeting stakeholder needs, and complying with regulatory requirements.

IV&V aims to increase probability of project success by performing objective verification that the system is built following industry standards and best practices and validation that the system will meet operational, organizational, and user needs. Simply put, this means ensuring the system is built right and that the right system is built. IV&V reports on project findings based on the verification and validation activities performed. The benefits of IV&V include identification of high-risk areas early and actionable recommendations.

Our IV&V approach begins with information gathering. This includes conducting interviews, observing project activities, and reviewing project artifacts. We then evaluate project performance utilizing IV&V checklists based on industry standards and best practices. The resulting checklist observations are analyzed and synthesized into findings which can be positive, preliminary concerns, risks, or issues. Recommendations are made to address all identified risks and issues and are tailored for consideration of the project's and organization's specific needs and circumstances.

IV&V ASSESSMENT FRAMEWORK

Team Accuity provides an objective assessment by maintaining technical, managerial, and financial independence from DLIR and DataHouse. Our assessment is performed in the following three IV&V Assessment Areas:

- ***Program Governance*** is the role of oversight that defines the guiding vision for the project and oversees the achievement of goals and realization of benefits.
- ***Project Management*** is the people, processes, approach, and tools to direct and control project activities.
- ***Technology*** includes the technical solution as well as the processes, approach, and tools to design and build the system.

Each of the IV&V Assessment Areas are comprised of IV&V Assessment Categories which group related project tasks to provide greater detail and analysis. The overall project as well as each IV&V Assessment Area and IV&V Assessment Category is assigned a criticality rating (see Appendix A: IV&V Criticality and Severity Ratings) based on the severity ratings of each related risk and issue, the overall impact of the related findings to the success of the project, and the urgency of and length of time to implement remediation or risk mitigation strategies.

IV&V ACTIVITIES

The focus of our IV&V activities for this initial assessment was to quickly assess the project's current status, understand the technical solution, and evaluate project execution to date. On-site fieldwork was performed primarily from May 6, 2019 to May 24, 2019. However, as the DataHouse project team does not work at DLIR except for certain meetings or working sessions and we were not given permission to observe any DataHouse project team meetings, our assessment is limited only to the project activities that we were able to observe at DLIR. On May 28, 2019, Team Accuity was given limited access to the project's document repository based on specific document requests. A detailed listing of IV&V activities is listed in Appendix C: Interviews, Meetings, and Documents.

This Initial IV&V Report summarizes the results of the IV&V activities performed for the period April 5, 2019 through June 30, 2019 and will serve as the baseline IV&V assessment of project health at this stage in the project. Periodic IV&V assessment reports will be issued on a monthly basis beginning October 2019 through June 2021 to update and evaluate project progress and performance.

FINDINGS & RECOMMENDATIONS BY ASSESSMENT AREA

R OVERALL RATING

An overall project criticality rating was assigned based on our assessment of the three main IV&V Assessment Areas as summarized on the right and the severity of the underlying risks and issues. The criticality and severity ratings were influenced by the timing in which this initial assessment was performed and reported on. The various findings were assessed a greater degree of severity as it is almost eleven months into the project and there is an expectation that greater progress would have been made as well as a more immediate need for many of these problems to have already been ironed out. Additionally, the issuance of this report follows closely behind the recent DHS development which has put the project in a period of significant uncertainty until critical decisions are made.

RATING	IV&V ASSESSMENT AREA
Y	Program Governance
R	Project Management
R	Technology

The overall project red (high) criticality rating reflects our assessment that immediate action must be taken to resolve the following three items prior to moving forward in the design and development stages of Phase 1:

1. *Carefully evaluate and select an alternative solution.*
As the Content Management hosting infrastructure solution described in the DataHouse BAFO is not feasible, a thorough analysis should be performed to evaluate all possible total solution alternatives. DLIR should take this time to perform adequate due diligence before making any decisions. Refer to finding 2019.07.IT01.

2. *Set clear and measurable goals and success metrics.*
DLIR should set clear and measurable goals and success metrics that will help to objectively evaluate the performance of the project, the contractor, and the technical solution. Refer to finding 2019.07.PG05.

3. *Formalize key project management processes.*
The requirements management, risk and issue management, and communication management processes should be formalized including clarification of the roles and responsibilities between DLIR and DataHouse. Refer to findings 2019.07.PM02, 2019.07.PM06, 2019.07.PM07, 2019.07.PM09, and 2019.07.PM10.

Throughout the eCMS Project, there has been a general lack of clarity on the technical solution and project plan details. The recent DHS development has further shrouded the project in uncertainty. Team Accuity believes that the three items listed above must be addressed to set the project on a clear course forward. The following pages of the report describes in detail all of the 27 findings that we have identified as well as our 46 recommendations that we believe will further help to drive

AT-A-GLANCE

Resolve **BEFORE** moving forward

Perform **ADEQUATE** due diligence

Set **MEASURABLE** success metrics

FORMALIZE processes

progress and elevate project performance. Each finding includes detailed observations, relevant industry standards and best practices (see Appendix B: Industry Standards and Best Practices), in depth analysis, and tailored recommendations.

Both DLIR and DataHouse are already in the process of implementing changes based on IV&V recommendations that were informally made throughout the assessment period. However, it is essential that DLIR and DataHouse come together to decide on a comprehensive corrective action plan to move forward.

Summary of IV&V Assessment Area Ratings with Categories

The tables below summarize the IV&V Assessment Category criticality ratings for each of the three IV&V Assessment Areas. Explanation of each IV&V Assessment Category criticality rating are found in the following pages of the report.

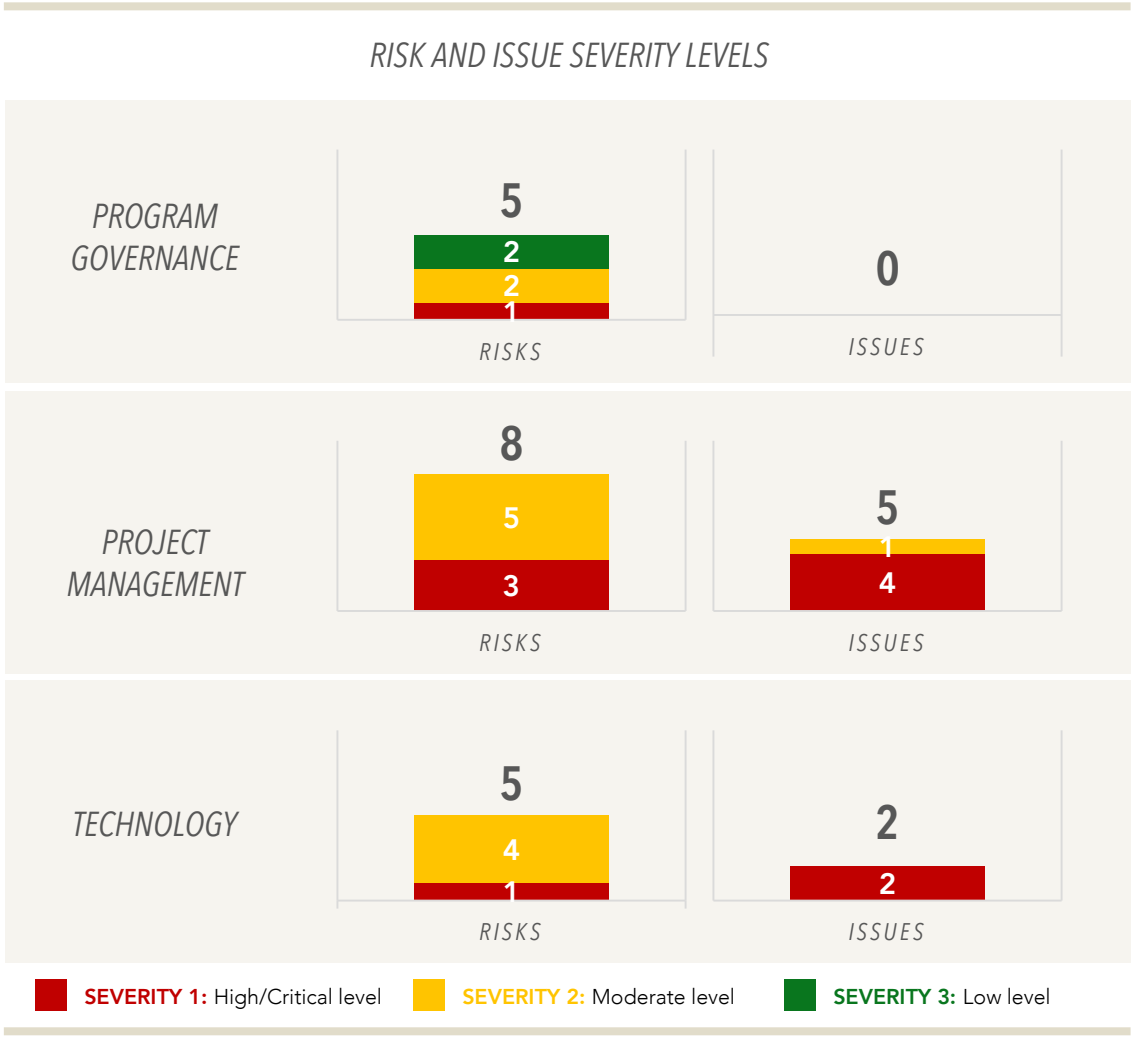
RATING	PROGRAM GOVERNANCE
Y	Governance Effectiveness
R	Benefits Realization

RATING	TECHNOLOGY
R	System Software, Hardware, and Integrations
R	Design
Y	Data Conversion
Y	Quality Management and Testing
Y	Configuration Management
Y	Security
NA	Code

RATING	PROJECT MANAGEMENT
R	Project Organization and Management
R	Communications Management
Y	Organizational Change Management
G	Stakeholder Engagement
R	Risk Management
R	Scope and Requirements Management
Y	Business Process Reengineering
R	Cost, Schedule, and Resource Management
NA	Training and Knowledge Transfer

Summary of Risks and Issues by Severity Levels

The graphs below summarize the risks and issues by severity rating for each of the three IV&V Assessment Areas. The Project Management IV&V Assessment Area had the greatest number of risks and issues as well as the greatest number of severity 1 (high) ratings.



KEY TERMS

RISK
An uncertain event or condition that, if it occurs, has a positive or negative effect on a project's objectives.

ISSUE
An event, often previously identified as a risk, which has occurred and caused negative impact to the project.

PROGRAM GOVERNANCE

RATING	PROGRAM GOVERNANCE
Y	Governance Effectiveness
R	Benefits Realization

The Program Governance IV&V Assessment Area encompasses two IV&V Assessment Categories: Governance Effectiveness and Benefits Realization. Program governance is the role of oversight to ensure the strategic alignment of projects to organization goals and the realization of benefits.

Currently, the eCMS DLIR Admin Group functions informally as the project governing group. The eCMS DLIR Admin Group includes the DCD Executive Sponsor, DLIR Project Manager, DCD Business Manager, Electronic Data Processing Systems Office (EDPSO) Program Specialist, and EDPSO Technical Specialist. The DCD Executive Sponsor is very hands-on and highly engaged in the eCMS Project, playing a crucial role of cultivating a culture of collaboration and continuous improvement. The Office of Enterprise Technology Services (ETS), as the State of Hawaii's IT oversight office, has also been closely following and consulting the eCMS Project.

Although both DLIR and ETS participate in an active role in governing the project, program governance has not been formalized through an executive steering committee and change control board. Additionally, the eCMS Project did not prepare a project charter which would formalize the project goals, target benefits, and success metrics at the start of the project. Broad goals and objectives are included in various project documents, however, specific and measureable success or benefit metrics are not defined, tracked, or used to evaluate project or contractor performance.

The Request for Proposal (RFP) and DataHouse contract did not include key components which would set the project up for success including industry best practice project management plans and other required documents as deliverables, evaluation criteria for accepting deliverables, and clear delineation of roles and responsibilities between the contractor and the State. ETS does not have IT guidelines, example project plans or checklists to help State departments properly procure, execute, and manage these large IT projects. Currently, there is no formalized process to share and leverage project management assets from other State IT projects.

The current disability compensation statutes do not align with the eCMS Project's primary modernization objective. Although the system is being designed to automate business processes and move towards a paperless environment, the current laws do not require the employers or insurance companies to electronically file the disability compensation forms which may lower the benefits realized from the new system.

A yellow (medium) criticality rating is assigned to Program Governance because the DCD Executive Sponsor's close involvement in the project has partially compensated for the lack of a formal governing body and lack of defined goals and success metrics.

AT-A-GLANCE

ACTIVE DCD Sponsor

Goals and success metrics **NOT DEFINED**

UNCLEAR DataHouse contract terms

Steering Committee **NOT FORMALIZED**

Need to ALIGN statutes

FINDING #: 2019.07.PG01	STATUS: OPEN	TYPE: POSITIVE	SEVERITY: N/A

TITLE: ACTIVE AND ENGAGED DCD EXECUTIVE SPONSOR

Finding: POSITIVE - The DCD Executive Sponsor is highly engaged and plays an active and visible role in guiding, monitoring, and championing the eCMS Project.

Industry Standards and Best Practices: Project Management Institute (PMI) research shows that actively engaged executive sponsors are the top driver of project success. Prosci research, considered by many project management groups as a successful organizational change management (OCM) framework, shows that "active and visible sponsorship is the single greatest contributor to the success of the change initiative". See www.prosci.com.

Analysis: The DCD Executive Sponsor's close involvement in the project has provided strong leadership that has, to an extent, compensated for the lack of formal governance (refer to finding 2019.07.PG02) and other project deficiencies noted throughout this report. However, as important as good sponsorship is, this factor alone can not be relied upon to guarantee project success.

Recommendation: N/A for positive findings

FINDING #: 2019.07.PG02	STATUS: OPEN	TYPE: RISK	SEVERITY: 2

TITLE: LACK OF FORMAL GOVERNANCE

Finding: The lack of a formal executive steering committee and change control board may limit the effectiveness of project governance.

Industry Standards and Best Practices: PMI research shows that steering committees contribute to project success. PMI Project Management Body of Knowledge (PMBOK) Chapter 4 lists the responsibilities of the change control board to include reviewing, evaluating, and approving changes to the project.

Analysis: The DataHouse proposal and Project Management Plan (version 1.2) make references to a steering committee, however, a formal committee was not chartered. Currently, the DCD Executive Sponsor is assigned the authority in the Project Management Plan to approve all project changes.

Recommendation: 2019.07.PG02.R1 – *Assemble and formalize an executive steering committee.*

- The size and selection of committee members should balance the representation of key stakeholders with the need for efficient decision making.
- Formalize the committee mission, responsibilities, and the types and the thresholds of decisions that need committee approval in a steering committee charter.
- Consider the need or ease of creating a change control board with a subset of the committee for certain types of decisions.

FINDING #: 2019.07.PG03	STATUS: OPEN	TYPE: RISK	SEVERITY: 2

TITLE: UNCLEAR DATAHOUSE CONTRACT TERMS

Finding: The unclear DataHouse contract terms may limit objective evaluation of contractor performance and contract fulfillment.

Industry Standards and Best Practices: PMI PMBOK Chapter 12 lists procurement contract components including major deliverables, performance reporting, and quality and acceptance criteria.

Analysis: The procurement of the System Integrator (SI) for the eCMS Project was performed by DLIR EDPSO and reviewed by ETS. The RFP and DataHouse contract does not clearly outline expected deliverables, evaluation criteria for accepting deliverables, and clear delineation of roles and responsibilities. There has already been confusion or misunderstandings due to unclear contract terms in the areas of form design, risk and issue tracking (refer to finding 2019.07.PM09), requirements tracking (refer to finding 2019.07.PM10), and communications (refer to finding 2019.07.PM07). Additionally, the lack of specific acceptance criteria has led to approval of deliverables that do not meet industry standards (refer to finding 2019.07.PM.03). DataHouse has already prepared certain management plans and project documents and has been amenable to providing certain additional deliverables even though they were not clearly required to by the RFP or contract. Clear contract terms set expectations for deliverables and will assist DLIR to ensure that contractors fulfill obligations to the standard of quality that is required.

Recommendation: 2019.07.PG03.R1 – *Evaluate the need for a contract modification to clarify contract terms.*

- Consider including key project documents as deliverables such as a requirements management plan and requirements traceability matrix (RTM) (refer to finding 2019.07.PM10), risk and issue log (refer to finding 2019.07.PM09), and testing documentation.
- Consider including acceptance criteria based on industry standards. For example, the acceptance criteria could be compliance with Institute of Electrical and Electronics Engineers (IEEE) 29148-2018 for a requirements traceability matrix or compliance with IEEE 829 for test documentation.
- Consider including measurable success metrics (refer to finding 2019.07.PG05).
- Consider the need to outline roles and responsibilities between DLIR and DataHouse (refer to finding 2019.07.PM02).

PROGRAM GOVERNANCE

Governance Effectiveness

Benefits Realization

FINDING #: 2019.07.PG04	STATUS: OPEN	TYPE: RISK	SEVERITY: 3

TITLE: LACK OF GUIDELINES, CHECKLISTS, AND SHARED PROJECT ASSETS

Finding: The lack of guidelines, checklists, and shared project assets may reduce project performance and efficiency.

Industry Standards and Best Practices: PMI PMBOK Chapter 2 discusses different types of project management office (PMO) types which include supportive, controlling, or directive. The supportive type PMOs serve as a project repository by supplying templates, best practices, training, and access to project assets from other projects.

Analysis: Large IT projects are not a regular occurrence for many State departments. Often times project resources are assigned from within the departments that have valuable organizational and operational knowledge but do not have the necessary project management experience. Having guidelines and checklists and access to project documents from past State projects would greatly benefit even experienced project teams. ETS, as the State of Hawaii's IT oversight office, is in the best position to gather project assets and put forth guidelines.

Recommendation: 2019.07.PG04.R1 – *Initiate conversations with ETS to discuss DLIR IT and project support needs and responsibilities.*

- Discuss what resources, guidance, and shared project assets would be most helpful to DLIR.
- Discuss what project assets DLIR can provide to contribute to the development of a centralized project management library.
- Consider involving the project steering committee to align and clarify ETS vs. steering committee governing roles.

FINDING #: 2019.07.PG05	STATUS: OPEN	TYPE: RISK	SEVERITY: 

TITLE: CLEAR AND MEASURABLE GOALS AND SUCCESS METRICS NOT DEFINED OR MONITORED

Finding: Not defining, tracking, or using clear and measurable goals and success metrics to evaluate project and contractor performance may reduce benefits expected at project completion.

Industry Standards and Best Practices: PMI project management and benefits realization management and Prosci organizational change management best practices all include the identification of success metrics and the regular monitoring of progress towards achieving predefined success metric goals.

Analysis: The eCMS Project does not have a project charter that would have helped to formalize the project goals, target benefits, and success metrics at the start of the project. Based on informal recommendations made by Team Accuity during the initial IV&V on-site review, DLIR is in the process of creating a project charter that includes clear goals and success metrics. The lack of clear and measurable goals and success metrics makes it difficult to determine if the project and technical solution will achieve the desired level of improvement or benefits that justify the project's financial investment. Goals and success metrics need to be defined before going any further in the project as they should be guiding all key decisions throughout the entire project.

Recommendation: 2019.07.PG05.R1 – *Formalize measurable goals and success metrics in a project charter.*

- Consider financial, nonfinancial, tangible, and intangible metrics such as operational Key Performance Indicators (KPIs), customer or employee satisfaction, user adoption, return on investment, or cycle or processing times.
- Consider project management, organizational change management, and benefits realization management objectives as well as alignment to DLIR goals.

2019.07.PG05.R2 – *Collect baseline and project performance data.*

- Consider methods for collecting data such as surveys, queries, observation, open forums, or actual performance testing.
- Consider sources of data such as legacy systems, operations, and internal and external stakeholders.

2019.07.PG05.R3 – *Use performance data to monitor or evaluate project or contractor performance.*

PROGRAM GOVERNANCE

Governance Effectiveness

Benefits Realization

FINDING #: 2019.07.PG06	STATUS: OPEN	TYPE: RISK	SEVERITY: 3

TITLE: NEED TO ALIGN STATUTES WITH MODERNIZATION OBJECTIVES

Finding: Failure to align statutes with the eCMS Project modernization objectives may reduce the operational improvements that are achieved.

Industry Standards and Best Practices: N/A

Analysis: The eCMS Project's primary modernization objective is to move to a paperless and automated business process. The new system is being designed to allow for electronic filing, routing, and tracking of forms. However, current disability compensation statutes have not been revised to require that these forms are filed electronically by law. As such, manual paper forms may continue to be submitted by external users such as claimants, employers, and insurance companies. As the development of a portal for public filing will not begin until Phase 3, this risk is not as imminent. However, as the evaluation of potential impacts, collection of feedback from stakeholders, and the legislative process to amend statutes is a long process, the initial planning should begin as early as possible so as not to postpone or reduce the realization of the benefits from the new system.

Recommendation: 2019.07.PG06.R1 – *Develop a plan and timeline to amend the statutes to align to project and organizational objectives.*

R PROJECT MANAGEMENT

The Project Management IV&V Assessment Area encompasses nine IV&V Assessment Categories. Project Management is the people, processes, approach, and tools to direct and control project activities.

A red (high) criticality rating is assigned to Project Management due to informal and ineffective project management approaches. While we understand that formal plans and processes are not practical in all project management areas given limited time and resources, there are several key areas where additional planning and consideration for a more formalized approach will help to significantly increase probability of project success. Some of the key areas of concern include:

- Ineffective project organization including DLIR and DataHouse working in silos
- Overtasked project resources
- Inadequate communication activities
- A weak risk management approach not adequately addressing project risks
- Incomplete requirements documentation
- Change requests are not properly documented or submitted for approval
- Inability to fully evaluate the impact of project delays due to incomplete project schedules
- Lack of cost management practices including review of monthly payment schedules in light of project delays
- Project documents and deliverables being approved without understanding the far-reaching impact on the quality of the solution

RATING	PROJECT MANAGEMENT
R	Project Organization and Management
R	Communications Management
Y	Organizational Change Management
G	Stakeholder Engagement
R	Risk Management
R	Scope and Requirements Management
Y	Business Process Reengineering
R	Cost, Schedule and Resource Management
NA	Training and Knowledge Transfer

AT-A-GLANCE

DEDICATED DLIR Project Manager

INCOMPLETE and **UNCLEAR** requirements

Project Risks not **IDENTIFIED** and **TRACKED**

SI works **OFFSITE**

INEFFECTIVE communication activities

The criticality ratings for the Project Management IV&V Assessment Categories are based on the underlying risks and issues detailed in the following pages except for Stakeholder Engagement and Training and Knowledge Transfer. The Stakeholder Engagement is assigned a green (low) risk rating as many internal stakeholders are regularly included in project sessions and external stakeholders will not be significantly impacted until Phase 3: Portal. There is a preliminary concern that there are no formal processes to identify and manage stakeholder needs, however, this is already partially addressed by the recommendations made under Communication Management (refer to finding 2019.07.PM07) and Organization Change Management (refer to finding 2019.07.PM08). The Training and Knowledge Transfer category was not applicable at the current phase of the project.

FINDING #: 2019.07.PM01	STATUS: N/A	TYPE: POSITIVE	SEVERITY: N/A

TITLE: DEDICATED AND COLLABORATIVE DLIR PROJECT MANAGER

Finding: POSITIVE - The DLIR Project Manager is a dedicated project lead who works collaboratively with internal stakeholders.

Industry Standards and Best Practices: PMI PMBOK Chapter 3 describes the critical role of a project manager in leading a project team to achieve project objectives. The PMI Talent Triangle framework include technical project management, leadership, and strategic and business management as the three essential skill sets for Project Managers. PMI research shows that leaders demonstrate such qualities and skills as being positive, collaborative, and able to manage relationships.

Analysis: The DLIR Project Manager is hardworking and has continually demonstrated dedication to the project and an eagerness to learn. Additionally, the DLIR Project Manager has some of the necessary leadership qualities that make her a good project manager. Her positive nature and collaborative approach develops trust with and satisfies concerns of many internal stakeholders. This has mitigated some of the communication and OCM risks (refer to findings 2019.07.PM07 and 2019.07.PM08). However, the DLIR Project Manager is the only full-time DLIR employee assigned to the eCMS Project and there is not a sufficient amount of project resources (refer to finding 2019.07.PM14) to properly manage the project.

Recommendation: N/A for positive findings

FINDING #: 2019.07.PM02	STATUS: OPEN	TYPE: RISK	SEVERITY: 

TITLE: INEFFECTIVE PROJECT MANAGEMENT ORGANIZATION

Finding: The current project management organization may hinder project performance.

Industry Standards and Best Practices: PMI PMBOK Chapter 2 describes different project organizational structure types and factors to consider in selecting an organizational structure type including accountability assignment, efficiency of performance, physical locations, and clear communications. PMI Agile Practice Guide Chapter 4 notes colocation as one of the attributes of successful Agile teams that contributes to better communications, improved team dynamics, and knowledge sharing.

Analysis: The eCMS Project has failed to achieve team synergy between DLIR and DataHouse project team members and appear to work as separate teams instead of one. DataHouse works almost exclusively off-site except for designated meetings, workshops, and design sessions and DLIR is not included in many project design or development activities. The unclear contract terms regarding roles and responsibilities between DLIR and DataHouse (refer to finding 2019.07.PG03), physical separation of the project team, and limited collaboration or DLIR involvement have all contributed to the siloed workstreams. This has also led to ineffective communications within the project team (refer to finding 2019.07.PM06).

Recommendation: 2019.07.PM02.R1 – *Clarify roles and responsibilities between DLIR and DataHouse.*

- Consider revising project management plans to identify the person responsible and list specific responsibilities for each project management area.
- Consider the need to include an outline of DLIR and DataHouse roles and responsibilities in a contract modification (refer to finding 2019.07.PG03).

2019.07.PM02.R2 – *The DataHouse Project Manager should work onsite at DLIR through project completion to improve DLIR and DataHouse project team cohesion.*

2019.07.PM02.R3 – *Include DLIR in project activities and communications to increase DLIR and DataHouse project team cohesion.*

FINDING #: 2019.07.PM03	STATUS: OPEN	TYPE: ISSUE	SEVERITY: 2

TITLE: INEFFECTIVE DELIVERABLE REVIEW AND ACCEPTANCE PROCESS

Finding: The current deliverable review and acceptance process has contributed to project delays and resulted in the acceptance of deliverables that do not meet industry standards.

Industry Standards and Best Practices: PMI PMBOK Chapter 5 states that validating each deliverable throughout the project increases the probability of final product acceptance at the end of the project. PMI PMBOK Chapter 8 describes the importance of quality management to ensure that deliverables meet requirements for final acceptance.

Analysis: DataHouse prepares project deliverables and submits to DLIR for review. As DLIR has had limited involvement in project activities or the preparation of deliverables (refer to finding 2019.07.PM02), DLIR does not have an understanding of the purpose of the deliverables or the thought process and factors that were considered in developing the deliverables. This has led to protracted review periods and acceptance of deliverables that do not meet industry standards (refer to finding 2019.07.PM10). A lack of a clear deliverable listing or acceptance criteria (refer to finding 2019.07.PG03), a lack of a quality management process and resource to verify deliverables (refer to finding 2019.07.IT05), and over tasked project managers (refer to finding 2019.07.PM14) also contribute to an ineffective deliverable review and acceptance process. The delay in the approval of deliverables has been cited by the eCMS Project team as one of the reasons the Phase 1 go-live dates were extended. Based on informal IV&V recommendations, DataHouse and DLIR started to implement joint deliverable review meetings beginning June 2019.

Recommendation: 2019.07.PM03.R1 – *Establish deliverable acceptance criteria.*

- Consider including acceptance criteria in the quality management plan (refer to finding 2019.07.IT05), in a contract amendment (refer to finding 2019.07.PG03), or in Deliverable Expectation Documents (DED).

2019.07.PM03.R2 – *Hold joint DLIR and DataHouse deliverable review meetings to walk through deliverables.*

2019.07.PM03.R3 – *Implement formal deliverable review and approval processes.*

- Include both the scope validation process for acceptance and the quality control process for correctness (refer to finding 2019.07.IT.05).
- Include an evaluation of deliverables against acceptance criteria and requirements documentation.
- DLIR should understand how each deliverable impacts the project schedule, roles and responsibilities, and ultimately the quality of the technical solution and success of the project.

FINDING #: 2019.07.PM04	STATUS: OPEN	TYPE: ISSUE	SEVERITY: 

TITLE: PROJECT PROGRESSION WITHOUT FORMAL AGREEMENTS WITH DHS

Finding: DataHouse proposed a solution on their BAFO without obtaining a written letter of intent between DataHouse and DHS. Furthermore, the eCMS Project advanced for 10 months without a formal MOU between DLIR and DHS, and with reliance on the DataHouse Project Sponsor to lead discussions due to her experience with DHS.

Industry Standards and Best Practices: DAMA Data Management Body of Knowledge (DMBOK) Section 6.1 states that prior to the development of interfaces or the provision of electronic data, it is important to develop a data sharing agreement or MOU which stipulates the responsibilities and acceptable use of data to be exchanged, which are approved by the business data stewards. The data sharing agreements should specify anticipated use and access to the data, restrictions on use, as well as expected service levels, including required system up times and response times.

Analysis: The DataHouse BAFO proposed a technical solution that planned to leverage DHS's IBM FileNet environment, however, there was no written agreement between DataHouse and DHS that supported DHS intent to support shared services. Once the eCMS Project was underway, the MOU discussions with DHS were primarily led by the DataHouse Project Sponsor. The eCMS Project advanced for 10 months without finalizing the MOU between DHS and DLIR. As the proposed solution is no longer viable due to the recent DHS development, an alternative solution must be determined (refer to finding 2019.07.IT01) and previously accepted or drafted deliverables may need to be updated. Although the eCMS Project will not be able to utilize DHS's IBM FileNet environment, the project still plans to leverage DHS's enterprise licenses for FileNet and Datacap. Before moving forward in the project, DLIR should finalize all necessary agreements to ensure that the alternative solution is viable and prevent further delays.

Recommendation: 2019.07.PM04.R1 – *Finalize the MOU to leverage DHS's enterprise licenses for FileNet and Datacap.*

2019.07.PM04.R2 – *DLIR* should lead all *discussions and negotiations of vendor contracts or agency agreements.*

2019.07.PM04.R3 – *Identify and complete all critical tasks prior to moving forward with an alternative solution.*

FINDING #: 2019.07.PM05	STATUS: OPEN	TYPE: RISK	SEVERITY: 

TITLE: LACK OF CLARITY OF DEVELOPMENT METHODOLOGY

Finding: A lack of clarity on DataHouse's development methodology may not allow or adequately prepare stakeholders to participate readily.

Industry Standards and Best Practices: PMI research on hybrid methodologies discusses that this approach is not a one-size-fits-all. It is important to take best practices from traditional Waterfall and Agile and form a tailored methodology.

Analysis: DataHouse is using a modified Agile development methodology that is referred to as "Water-SCRUM-Fall". This is a combination of the waterfall and Agile methods that defines the full set of requirements at the beginning but uses Agile user stories and sprints while building the software. Based on the current project plan, the eCMS Project was supposed to begin the Build stage of Phase 1 and transition to the SCRUM methodology. Although the recent DHS development will likely delay the kickoff of this stage, there are a number of concerns regarding the transition to the SCRUM methodology:

- DataHouse has not yet fully determined the number, length, and details of the sprints.
- The project schedule also does not yet reflect the agile sprints cycles or identify resources who are expected to participate.
- There have not been communications with the DLIR project team and stakeholders regarding the SCRUM methodology or the roles and responsibilities they have during this stage of the project.
- Many of the DataHouse project team members work remotely and are unable to work on-site.

Recommendation: 2019.07.PM05.R1 – *Formalize an approach for executing SCRUM phases.*

- Consider industry best practices for Agile methodologies such as retrospectives, daily standups, burndown charts, and frequent user demonstrations and feedback.
- Establish the backlog preparation and refinement process.
- Establish virtual conferencing tools and communication protocols for geographically distributed team members.
- Set the number and length of the sprints.
- Update the project schedule for sprint activities and assign resources (refer to finding 2019.07.PM14).
- Include clear and detailed procedures and roles and responsibilities for SCRUM tasks (refer to finding 2019.07.PM02).
- DLIR should be included in project team activities (refer to finding 2019.07.PM02).

2019.07.PM05.R2 – *Communicate the approach for executing SCRUM phases to all team members and impacted stakeholders.*

FINDING #: 2019.07.PM06	STATUS: OPEN	TYPE: ISSUE	SEVERITY: 1

TITLE: INEFFECTIVE COMMUNICATION BETWEEN DATAHOUSE AND DLIR PROJECT TEAMS

Finding: DataHouse's ineffective and untimely communications with the DLIR Project Team contributed to DLIR's incomplete understanding of the technical solution, potential risks, and upcoming project activities.

Industry Standards and Best Practices: PMI research shows communication is a vital element of a well-managed project and nothing is more important to the success of a project than effective communication. PMBOK Chapter 10 outlines best practices for communication frequencies and methods, escalation processes, and methods for monitoring and evaluating communication activities.

Analysis: Communication activities listed in the Project Management Plan (version 1.0) did not occur as planned as the weekly project status meetings did not begin until April 2019 and the first progress report was not completed until February 2019. Despite the commencement of regular project communications, misunderstandings and miscommunications between the DataHouse and DLIR project teams continued to occur. DLIR project team members had a piecemeal understanding of the technical solution (refer to finding 2019.07.IT02) and project risks and issues (refer to finding 2019.07.PM09). Additionally, information regarding upcoming project activities was not provided timely. For example, DataHouse did not timely communicate to DLIR what to expect for the design stage sessions (e.g., what would be covered each day, which end users needed to participate). There has also been a lack of communications regarding the upcoming build stage activities (refer to finding 2019.07.PM05).

The IV&V recommendations made at 2019.07.PM02.R2 and 2019.07.PM02.R3 regarding DataHouse working on-site and including DLIR in project activities will also address this finding. Below are additional recommendations to further improve project team communications.

Recommendation: 2019.07.PM06.R1 – *Implement daily touch point meetings between DataHouse and DLIR Project Managers.*

FINDING #: 2019.07.PM07	STATUS: OPEN	TYPE: RISK	SEVERITY: 2

TITLE: NEED FOR TARGETED PROJECT COMMUNICATIONS FOR IMPACTED STAKEHOLDERS

Finding: The lack of tailored project communications for all impacted stakeholders may reduce user adoption and stakeholder buy-in.

Industry Standards and Best Practices: PMI PMBOK Chapter 10 describes the importance of effective, successful communication. This includes ensuring project stakeholders receive project information based on their needs and developing a communication strategy that includes various approaches and methods for sharing project information. Prosci research shows that communication is also a critical component of implementing change. Effective communication is targeted for different audiences impacted by the change initiative and focuses on what they care about and what they need to know. See www.prosci.com.

Analysis: Communications management is a part of the Project Management Plan developed by DataHouse, however, the plan is not comprehensive and primarily reflects project meetings, status reporting, and issue reporting. The approved Project Management Plan (version 1.2) was updated to include a communication matrix that outlines additional communication activities. While this is an improvement over the previous version, the latest draft plan still does not provide adequate details regarding communication activities as all stakeholders are grouped together for three broad communication methods and activities.

A formal communication requirements analysis was not conducted to determine the information needs of internal and external project stakeholders. There is not a process to ensure the timely distribution of project information and there is no dedicated role or adequate resources assigned to communications management (refer to finding 2019.07.PM14). As such, communication activities have occurred haphazardly. The limited communication activities is somewhat mitigated as the DLIR Project Manager involves internal stakeholders in project-related meetings and working sessions. However, this informal approach does not include all internal stakeholders or any external stakeholders.

Recommendation: 2019.07.PM07.R1 – *Further refine communication management plans.*

- Segment stakeholders into groups by communication needs such as by department unit (e.g., Hearings, Enforcement, or Records and Claims), by position (e.g., manager, supervisor), or internal and external (e.g., claimants, insurance agencies).
- Consider the list of communication methods listed in DataHouse's BAFO.
- Due to limited DLIR resources available for communication activities, the specific groups and communication activities should be prioritized to focus resources most efficiently.
- Update the project schedule for communication activities and assigned resources (refer to finding 2019.07.PM14).

FINDING #: 2019.07.PM08	STATUS: OPEN	TYPE: RISK	SEVERITY: 2

TITLE: NEED FOR A STRUCTURED OCM APPROACH

Finding: Missing key OCM steps or activities may not identify pockets of resistance or adequately enable individual change.

Industry Standards and Best Practices: Prosci research supports how critical OCM is to project success. Organizational change initiatives impact how individual employees do their jobs and thus the success of the initiative is tied to individuals adopting the change. OCM helps to support individuals through the change so that project objectives are achieved. See www.prosci.com.

Analysis: There is no formal OCM plan or approach. DataHouse's BAFO lists various OCM activities but these were not formalized in a plan or processes. There are no OCM specific tasks or resources assigned for OCM activities in the project schedule (refer to finding 2019.07.PM14). Although there is no formal or coordinated OCM approach, some elements of OCM occur through regular project management communication and training activities. The DLIR Project Manager's inclusive and collaborative approach with internal stakeholders (refer to finding 2019.07.PM01) and the DCD Executive Sponsor's active and visible support of the project (refer to finding 2019.07.PG01) also mitigates the lack of a formal approach.

Although projects may progress without a formal OCM approach, industry best practices support that a structured OCM approach compliments project management approaches in increasing probability of project success. Performing activities with an OCM focus will help to better prepare, equip, and support individuals throughout the project and to ensure that the solution is ultimately adopted and embraced by employees.

Recommendation: 2019.07.PM08.R1 – *Develop and implement a structured OCM approach.*

- Collect baseline change awareness and readiness measurements through surveys or interviews.
- Create and mobilize a change coalition group of managers, supervisors, and key influencers.
- Incorporate and align OCM into communication, business process engineering (BPR), and training activities.
- Develop OCM activities to address identified awareness gaps or pockets of resistance.
- Implement reinforcement mechanisms to support change and increase adoption.

FINDING #: 2019.07.PM09	STATUS: OPEN	TYPE: ISSUE	SEVERITY: 1

TITLE: PROJECT RISKS AND ISSUES HAVE NOT BEEN CLEARLY IDENTIFIED, TRACKED, OR REPORTED

Finding: Risks and issues have not been clearly identified, tracked, or reported resulting in the lack of understanding of potential impacts across project team members and there are no mitigation plans to adequately address them.

Industry Standards and Best Practices: PMI PMBOK Chapter 11 explains that the clear identification of project risks allows the project team to respond appropriately. Meetings to identify risks may include the project manager, project team members, subject matter experts, end users, other project managers, operations managers, and stakeholders. It is important to involve the project team so they feel ownership and responsibility for the identified risks, the risk responses and the level of overall risk.

Analysis: Only three risks and two issues have been identified by DataHouse on the project to date with no history of any risks being closed. DLIR project team was not tracking any of its own risks or issues related to the project. A risk regarding the delay in the completion of the MOU agreement with DHS (refer to finding 2019.07.PM04 and 20109.07.IT01) was never identified and the risk identified in the Content Management Conversion and Migration (version 0.0) document (refer to finding 2019.07.IT.04) was not included in the risks and issues log, indicating an ineffective risk and issue management process. Based on information IV&V recommendations made during the assessment period, both DLIR and DataHouse have communicated a plan to start identifying and logging risks jointly onto DataHouse's log and reviewing them together weekly. As identification and mitigation of risks and issues are critical to project success, a formal process should be implemented before moving forward in the project.

Recommendation: 2019.07.PM09.R1 – *Formalize the Risk and Issue Management process.*

- A formalized process should clearly define responsibilities and steps in identification, resolution and action items tracking, and escalation procedures.
- The project team must encourage open, transparent discussion about risks and issues.

2019.07.PM09.R2 – *Conduct regular meetings to discuss project risks and issues.*

- Include DataHouse and DLIR and, on occasion, the executive steering committee (refer to finding 2019.07.PG02).
- Perform a detailed review of new items, status of open items, risk/issue owners, and mitigation plans.

FINDING #: 2019.07.PM10	STATUS: OPEN	TYPE: ISSUE	SEVERITY: 1

TITLE: PROJECT REQUIREMENTS ARE INCOMPLETE AND LACK SUFFICIENT DETAIL

Finding: The Content Management and Case Management requirements documentation is incomplete.

Industry Standards and Best Practices: PMI PMBOK Chapter 5 states that requirements documentation need to be unambiguous (measureable and testable), traceable, complete, consistent, and acceptable to key stakeholders. IEEE 15288-2015, under 6.4.3, states that the system requirements should include functional, performance, process, non-functional, and interface requirements and should be allocated and traceable to system elements. IEEE 29148-2018 defines the construct of a good requirement, provides attributes and characteristics of requirements, and discusses the iterative and recursive application of requirements processes throughout the life cycle. Provides additional guidance in the application of requirements engineering and management processes for requirements-related activities.

Analysis: The requirements for both Content Management and Case Management have already been approved, however, the requirements are incomplete (e.g. do not incorporate all contract requirements and all three project phases) and the descriptions in the Requirements Traceability Matrix (RTM) lack sufficient detail. The current RTM also does not link operational and project objectives to design artifacts. Furthermore, the RTM does not include non-functional requirements, including compliance with Hawaii Revised Statues, Hawaii Administrative Rules and security requirements.

Requirements management is a part of the Project Management Plan developed by DataHouse, however, the plan is not comprehensive. The Project Management Plan (version 1.2) was updated to include additional details regarding requirements management. While this is an improvement over the previous version, the latest draft plan still does not provide adequate details regarding the requirements prioritization process, the traceability structure, and how requirements will be reported.

As requirements are the foundation for proper system design, development, and testing, it is essential that requirements documentation are complete and meet industry standards and best practices. Requirements documentation should be revised and requirements management processes should be improved prior to moving forward in the project.

FINDING #: 2019.07.PM10	STATUS: OPEN	TYPE: ISSUE	SEVERITY: 1

TITLE: PROJECT REQUIREMENTS ARE INCOMPLETE AND LACK SUFFICIENT DETAIL (continued)

Recommendation: 2019.07.PM10.R1 – *Revise Content Management and Case management requirements documentation and RTM.*

- Ensure requirements follow SMART (specific, measureable, actionable, realistic and time bound) guidelines.
- Ensure requirements documentation include all requirements listed in the DataHouse contract, all requirements identified during the stakeholder sessions, and for all three phases of the eCMS Project.
- Ensure requirements include functional, performance, process, non-functional, security, and interface requirements.

2019.07.PM10.R2 – *Improve requirements management processes.*

- Ensure that there is a clear understanding between DataHouse and DLIR regarding who is responsible for identifying and tracking different types of requirements.
- Develop a process for prioritizing and reporting requirements.
- Develop a process for tracing requirements to specific system design elements.

FINDING #: 2019.07.PM11	STATUS: OPEN	TYPE: RISK	SEVERITY: 2

TITLE: NEED TO IDENTIFY AND ADDRESS BPR OPPORTUNITIES

Finding: Not identifying and addressing BPR opportunities prior to system design and development may require additional effort to correct.

Industry Standards and Best Practices: The Six Sigma framework uses the Define, Measure, Analyze, Improve, and Control (DMAIC) improvement cycle to drive BPR. Under Define, process problems are identified and defined through formalized tools and techniques. Under Measure, baseline performance is measured and established. Under Analyze, the root cause of problems are identified and analyzed. Under Improve, future state processes clearly show a structured process for improvement. Under Control, control activities are defined to measure gains and results and monitor success metrics.

Analysis: There is no formal plan for BPR activities. DataHouse's approach to BPR was to start with the current state process maps, walkthrough the process with stakeholders, and make updates to the processes maps. As a result of this process, DataHouse provided future state process maps. However, Team Accuity was unable to clearly understand how processes were prioritized for change, root causes were addressed, or processes were improved (e.g., elimination of rework loops).

Business process improvement is a key deliverable identified in the RFP and in DataHouse's contract. The DataHouse contract states that the key deliverable will be manifested through: faster throughput of data into the system; faster response times to requests by users, less errors reported in the system; greater flexibility to make system changes; and online access and input by internal and external users. However, the RFP and contract do not clearly identify how this deliverable will be supported, evaluated, or accepted by DLIR (refer to finding 2019.07.PG03). There should be clear documentation on how the new solution plans on measuring and achieving key business process improvement performance goals.

The IV&V recommendations made at 2019.07.PG05.R1, 2019.07.PG05.R2, and 2019.07.PG05.R3 regarding clear and measurable goals and success metrics will also address this finding. Below is an additional recommendation to further improve BPR activities.

Recommendation: 2019.07.PM11.R1 – *Identify and track BPR opportunities in a log.*

- This log should be used to plan BPR and design activities and to develop content for communications and training.

FINDING #: 2019.07.PM12	STATUS: OPEN	TYPE: RISK	SEVERITY: 1

TITLE: LACK OF FORMALIZED COST MANAGEMENT PRACTICES

Finding: Informal cost management practices may lead to unexpected costs or overpayments of contracts.

Industry Standards and Best Practices: PMI PMBOK Chapter 7 lists components of cost management plans such as rules of cost performance measurement, description of funding choices, and cost reporting.

Analysis: There is no formal cost management plan. A comprehensive total project budget is not created, tracked, or reported. Currently, payments are tracked for the two main eCMS Project contracts: DataHouse SI contract and the Team Accuity IV&V contract. Other costs for licenses and equipment are tracked informally as these are often paid from DCD's regular or excess funds. With the recent DHS development, costs of all required hardware and software for the alternative solution as well as long-term operational costs need to be properly evaluated and managed (refer to finding 2019.07.IT01). Additionally, total project costs and funding sources are not formally reported.

The DataHouse contract states that payments are contingent upon receipt of services, deliverables, and reports in accordance to the milestones that meet the expectations of the RFP. DataHouse provided DLIR with a monthly payment schedule and as of June 30, 2019, DLIR has paid DataHouse's invoices through April 2019 (May and June 2019 invoice payments are still pending). Although the project schedule, deliverable timelines, and go-live dates have been pushed back, no adjustments were made to the monthly payment schedule which could result in overpayments. Due to the lack of clear and specific deliverable expectations (refer to finding 2019.07.PG03), incomplete understanding of all the schedule delays (refer to finding 2019.07.PM13), and undefined criteria for revising the payment schedule, Team Accuity is unable to determine if DataHouse payments are appropriately managed.

Recommendation: 2019.07.PM12.R1 – *Prepare a comprehensive project budget and a schedule of long-term operational costs (e.g., licenses, subscriptions, maintenance, cloud services).*

2019.07.PM12.R2 – *Prepare regular cost reports for management and the executive steering committee.*

2019.07.PM12.R3 – *Clarify DataHouse payment terms and adjust payment schedules for schedule delays.*

FINDING #: 2019.07.PM13	STATUS: OPEN	TYPE: RISK	SEVERITY: 1

TITLE: INADEQUATE SCHEDULE MANAGEMENT PRACTICES

Finding: Inadequate schedule management practices may lead to project delays, missed project activities, unrealistic schedule forecasts, or unidentified causes for delays.

Industry Standards and Best Practices: PMI PMBOK Chapter 6 describes the elements of a project schedule that include planned dates, duration, milestones, and resources. Changes to schedule baseline should follow the change control process. Schedule control techniques include variance analysis, trend analysis, and performance reviews.

Analysis: The Phase 1 go-live dates were delayed a few times since the start of the project with the Content Management go-live delayed five months and the Case Management go-live delayed three months. Reasons for the delay provided by the eCMS Project team included additional time for requirements gathering, some Phase 2 work that was moved up to Phase 1, staff vacations during the holidays, time for the DLIR Project Manager to write the RFP for the IV&V contract, and delayed procurement of the scanners. Although there are reasonable explanations for some of the delays, detailed schedule variance analyses to understand causes and impacts of the delays have not been thoroughly performed, documented, or reported. Decisions or change requests to revise the project schedule are not properly documented or approved in accordance with the Project Management Plan.

DataHouse has prepared a higher-level project schedule and a more detailed task listing. Although the project schedule will need to be updated due to the recent DHS development and selection of an alternative solution, the following deficiencies were noted in the current project schedule:

- Does not include all project tasks such as Build stage sprints, communication, OCM, BPR, and quality assurance (refer to findings 2019.07.PM05, 2019.07.PM07, 2019.07.PM08, 2019.07.PM11, and 2019.07.IT05).
- Does not include estimated durations. Durations are only included in the more detailed task listing.
- Only includes tasks for Phase 1. The Phase 2 and 3 tasks are only included in the more detailed task listing.
- Specific assigned resources are not identified as only a generic DataHouse or DCD designation is used.

Recommendation: 2019.07.PM13.R1 – *Document and approve revisions to project schedule deliverables, milestones, and go-live dates in accordance with the Project Management Plan.*

2019.07.PM13.R2 – *Refine the project schedule with details of tasks, durations, phases, and assigned resources.*

2019.07.PM13.R3 – *Prepare regular schedule reports and schedule variance analyses for management and the executive steering committee.*

FINDING #: 2019.07.PM14	STATUS: OPEN	TYPE: RISK	SEVERITY: 2

TITLE: INADEQUATE PROJECT RESOURCES

Finding: Inadequate assigned project resources may lead to project delays, reduced project performance, or turnover of project resources.

Industry Standards and Best Practices: PMI PMBOK Chapter 9 stresses that projects should ensure that sufficient resources are available for the successful completion of the project. PMI PMBOK Chapter 3 also stresses that project managers should not be expected to perform every role on the project, but should understand and effectively plan for the resources, skills, and time commitments needed to achieve the project objectives.

Analysis: Team Accuity was unable to evaluate resource workloads based on the project schedule information (refer to finding 2019.07.PM13), however, based on observations of the eCMS Project team, the DataHouse and DLIR Project Managers appear to be over-tasked. The DLIR Project Manager is the only full-time DLIR employee assigned to the eCMS Project and understandably does not have time to perform all of the tasks to properly manage the project or represent DLIR during project activities. DLIR should increase participation in design and development activities (refer to finding 2019.07.PM02) but would not be able to with the current assigned resources.

Resource management is included in the Project Management Plan and states that "resources will be provided based on project needs. This will be reviewed with DCD on a quarterly basis." The Project Status Reports prepared by DataHouse do not note any resource needs under the Staffing (Needs, Anticipated Changes) section. However, Team Accuity noted that the DataHouse Quality Assurance Lead has not been assigned (refer to finding 2019.07.IT05). DataHouse is also considering adding a project coordinator resource to assist with meeting minutes and getting deliverables out.

Recommendation: 2019.07.PM14.R1 – *Reevaluate project resource needs and acquire additional resources.*

- Perform project schedule updates for the alternative solution (refer to finding 2019.07.IT01) and missing tasks (refer to finding 2019.07.PM13).
- Ensure resource levels and skill sets align to assigned tasks.

2019.07.PM14.R2 – *Prepare regular resource reports for management and the executive steering committee.*

- Consider including resource needs for unassigned tasks or roles.
- Consider including DLIR resources needed and estimated hours for upcoming project activities (e.g., design sessions, user demonstrations, or user testing).

R TECHNOLOGY

The Technology IV&V Assessment Area encompasses seven IV&V Assessment Categories. Technology includes the technical solution as well as the processes, approach, and tools to design and build the system.

A red (high) criticality rating is assigned to Technology as the Content Management hosting infrastructure solution is no longer feasible. Additionally, even before the recent DHS development, there has been a general lack of clarity on the technical solution and integration between the Content Management and Case Management solutions. DataHouse did not present DLIR with a description of the overall solution for development of the eCMS Modernization System that the DLIR project team fully understood. Although the need for an alternative Content Management hosting infrastructure solution is a setback for the eCMS project, this is an opportunity to reassess the current situation and conduct a thorough analysis of the total solution alternative options before launching into an immediate resolution.

RATING	TECHNOLOGY
R	System Software, Hardware and Integrations
R	Design
Y	Data Conversion
Y	Quality Management and Testing
Y	Configuration Management
Y	Security
NA	Code

AT-A-GLANCE

Proposed solution **NOT VIABLE**

Alternative solution not yet **IDENTIFIED**

Technology plans based on **INCOMPLETE AND OUTDATED REQUIREMENTS**

As the eCMS Project is currently in the Phase 1 Design stage, many of the Technology IV&V Assessment Categories do not have significant activities underway at this time. The Code IV&V Assessment Category is not applicable for this stage of the project. Most of the technology related plans have been drafted, however, all of the plans have not been approved by DLIR. Additionally, the Content Management design document and data conversion plan were drafted based on incomplete, inaccurate, and outdated requirements that may lead to a solution that does not meet stakeholder needs and project objectives.

The criticality ratings for the Technology IV&V Assessment Categories are based on the underlying risks and issues detailed in the following pages.

FINDING #: 2019.07.IT01	STATUS: OPEN	TYPE: ISSUE	SEVERITY: 1

TITLE: PROPOSED CONTENT MANAGEMENT HOSTING INFRASTRUCTURE SOLUTION IS NO LONGER FEASIBLE

Finding: The original solution proposed by DataHouse in their BAFO to leverage the existing DHS FileNet hosting infrastructure is no longer a feasible solution.

Industry Standards and Best Practices: N/A

Analysis: There are a number of items in the DataHouse BAFO that are no longer feasible based on the inability to leverage the existing DHS FileNet environment. Under the original solution, DHS would monitor and maintain the enterprise IBM FileNet environment. As DHS will no longer be providing access to their IBM FileNet environment, DLIR will need to identify resources to take on the monitoring and maintenance of the IBM FileNet infrastructure. Additionally, DataHouse is currently investigating cloud-based options. As DataHouse recommended in the BAFO the on-premise installation for the IBM ECM solution due to the capture volume and higher performance of document file transfers over the LAN and internal State network, DLIR should be provided with a technical analysis of various solution options that includes a comparison of the alternatives on performance.

Although this issue relates to the proposed hosting infrastructure solution for Content Management, this is an opportunity for both DataHouse and DLIR to reassess the total solution considering all updated technological opportunities available today. DLIR should ensure that DataHouse performs sufficient analysis regarding possible alternative solution options. DLIR should also take the time to perform adequate due diligence before making any decisions. It is important that thorough analysis and adequate due diligence is performed before moving forward in the project in order to avoid further project delays and to ensure that the delivered system will meet operational and stakeholder requirements.

Recommendation: 2019.07.IT01.R1 – *Evaluate other total solution alternatives.*

- Consider solutions that could include other technical applications that could utilize a different choice of methodology using different tools, provide a cheaper solution for the longer-term, and faster implementation.
- Consider the following website which lists 20 competitive alternatives to IBM FileNet for consideration: www.g2.com/products/ibm-filenet-content-manager/competitors/alternatives. Additional research could result in more extensive choices going forward.

FINDING #: 2019.07.IT01	STATUS: OPEN	TYPE: ISSUE	SEVERITY: 1

TITLE: PROPOSED CONTENT MANAGEMENT HOSTING INFRASTRUCTURE SOLUTION IS NO LONGER FEASIBLE (continued)

Recommendation (continued):

07.IT01.R2 – *Prepare a comprehensive technical analysis of the alternative solution.*

- Include the impact of the alternative solution to project cost, schedule, resources, security, maintenance and operations, system software, hardware integration requirements, performance requirements, and required infrastructure to ensure a complete and successful working solution.
- Clearly define what needs to be completed, who is responsible, steps for completion, and timing.
- Considerations for impact on project cost includes costs related to the following:
    - Processing, storage and connectivity
    - Operating system and database management licensing
    - Interfacing technologies
    - Maintenance and operations
    - Data center, collocation facilities and availability requirements
    - If it is decided that FileNet is the most cost effective and efficient solution, renewal and ongoing costs of FileNet enterprise licensing
- Considerations for impact on project schedule, time estimates, and resources include:
    - Acquisition, installation, and configuration of software and infrastructure
    - Ongoing maintenance and operations (patching, updates)
    - Performance of security assessments
    - Change and configuration management

FINDING #: 2019.07.IT02	STATUS: OPEN	TYPE: RISK	SEVERITY: 1

TITLE: UNCLEAR INTERFACE SOLUTION BETWEEN CASE AND CONTENT MANAGEMENT

Finding: An unclear interface solution may impact the design process and require additional effort to correct.

Industry Standards and Best Practices: DAMA DMBOK, Data Integration and Interoperability describes processes related to the movement and consolidation of data within and between data stores and applications. IEEE 15288-2015 Section 6.4.5 outlines the various activities and tasks in the design process that includes the refinement and full definition of interfaces.

Analysis: The Content Management Design (version 1.0) document was approved by DLIR on May 6, 2019. Case Management is currently in the design phase and design documents have not been provided. Although the Content Management design document was completed and Case Management design is in progress, the exact interface solution has not been defined. The interfaces between Content and Case Management are integral to the success of the project and should be fully defined in design documents in accordance with industry standards.

Due to the recent DHS development, the interface options will need to also be researched and analyzed depending on the alternative solution selected. However, even prior to this development, DLIR did not have a clear understanding of the interface solution as well as the complete technical solution. DLIR still had questions about the interface solution regarding the technology, connectivity, batch vs. real-time, security, cost and maintenance of the proposed interface solution between SalesForce and FileNet. The interface solution should be clearly analyzed, documented, mapped to project requirements, and communicated to DLIR.

Recommendation: 2019.07.IT02.R1 – *Document the interface solution and analysis.*

- Documentation should provide a clear understanding on the interface solution including the following:
  - How SalesForce will query the selected Content Management solution
  - How files are uploaded to selected Content Management solution from SalesForce
  - How metadata is uploaded into Salesforce
  - Who is responsible for setup, configuration, and maintenance and the steps required for implementation
  - What are the costs associated for development and long-term maintenance

2019.07.IT02.R2 – *Update the project schedule to define resources assigned to each of the interface-related activities.*

2019.07.IT02.R3 – *Verify the proposed interface solution will work.*

FINDING #: 2019.07.IT03	STATUS: OPEN	TYPE: ISSUE	SEVERITY: 1

TITLE: DESIGN DOCUMENTS BASED ON INCOMPLETE REQUIREMENTS

Finding: The Content Management design documents were based on incomplete, inaccurate, and outdated requirements.

Industry Standards and Best Practices: IEEE 15288-2015 Section 6.4.5 lists the following as the outcomes of the design process:

- Design characteristics of each system element are defined
- System requirements are allocated to system elements
- Design enablers necessary for design definition are selected or defined
- Interfaces between system elements composing the system are defined
- Design alternatives for system elements are assessed
- Any enabling systems or services needed for design definition are available
- Traceability of design characteristics is established

Analysis: Case Management is currently in the design phase and design documents have not been provided. The Content Management Design (version 1.0) document was approved by DLIR on May 6, 2019. The recent DHS development will require design documents to be updated after an alternative Content Management hosting infrastructure solution is selected. However, even prior to this development, the Content Management design documents were drafted based on requirements documentation that is incomplete (refer to finding 2019.07.PM10). The requirements document deficiencies should be remediated immediately and the design documents updated accordingly.

Recommendation: 2019.07.IT03.R1 – *Update the Content Management design documents.*

- Consider updates for revised requirements documents (refer to finding 2019.07.PM10) and for the alternative Content Management hosting infrastructure solution (refer to finding 2019.07.IT01).

FINDING #: 2019.07.IT04	STATUS: OPEN	TYPE: RISK	SEVERITY: 2

TITLE: DATA CONVERSION PLAN BASED ON INCOMPLETE REQUIREMENTS

Finding: A Content Management data conversion plan that is based on incomplete, inaccurate, and outdated requirements may impact the data migration design process and require additional effort to correct.

Industry Standards and Best Practices: DAMA-DMBOK2 framework outlines Extract Transform and Load (ETL) which refers to the methods involved in copying data from one or more sources into a destination system which represents the data differently from the sources or in a different context than the sources. Data extraction involves extracting data from homogeneous or heterogeneous sources. Data transformation processes data by data cleansing and transforming them into a proper storage format or structure for the purposes of querying and analysis. Data loading describes the insertion of data into the final target database such as an operational data store or database.

Analysis: Case Management is currently in the design phase and data conversion documents have not be drafted. The Content Management Conversion and Migration (version 0.0) document was drafted by DataHouse on June 13, 2019 but was not yet approved by DLIR. The document was drafted based on requirements documentation that is incomplete (refer to finding 2019.07.PM10). Furthermore, the Content Management Conversion and Migration (version 0.0) document included a risk that changes to the requirements after a certain point in the project may cause additional effort to re-factor the migration design process.

As data conversion is the process of converting data from one source to suit the system requirements of another, it is important that the data conversion plan is based on accurate system requirements. The requirements document deficiencies (refer to finding 2019.07.PM10) should be remediated immediately and the data conversion plan updated accordingly.

Recommendation: 2019.07.IT04.R1 – *Update the Content Management data conversion plan.*

- Consider updates for revised requirements documents (refer to finding 2019.07.PM10).

FINDING #: 2019.07.IT05	STATUS: OPEN	TYPE: RISK	SEVERITY: 2

TITLE: QUALITY MANAGEMENT PLAN NOT FINALIZED AND QUALITY ASSURANCE RESOURCE NOT ASSIGNED

Finding: Not having an approved quality management plan and assigned quality assurance resources may impact the quality of project deliverables.

Industry Standards and Best Practices: According to PMI PMBOK Chapter 8, a quality management plan should include such items as quality objectives of the project, quality standards, and quality control and quality management activities. Quality metrics are also developed as a part of planning for quality management and are the basis for developing test scenarios for quality control processes to verify compliance. Examples of quality metrics include the percentage of tasks completed on time, number of errors identified per case, or percentage of requirements covered by the test plan.

Analysis: The Quality Management Plan (version 0.1) was drafted by DataHouse on June 23, 2019 but was not yet approved by DLIR. The draft plan did not include quality metrics, quality standards, or quality objectives of the project and does not describe how quality control results will be documented or reported. Additionally, the Quality Assurance Lead identified in DataHouse's BAFO is not assigned to the project at this time.

As it is almost eleven months into the eCMS Project and several deliverables were already approved and many are pending approval, it is important for a quality management plan to be formalized and resources assigned to perform quality management activities.

Recommendation: 2019.07.IT05.R1 – *Finalize the quality management plan.*

- DataHouse and DLIR should collaborate and agree on the quality management processes and metrics that will best serve this project.
- Include quality standards or reference to specific criteria (refer to finding 2019.07.PM03).
- Update the project schedule to assign quality assurance resources (refer to finding 2019.07.PM14).

2019.07.IT05.R2 – *Perform quality management activities on previously approved or submitted deliverables.*

FINDING #: 2019.07.IT06	STATUS: OPEN	TYPE: RISK	SEVERITY: 2

TITLE: LACK OF A CONFIGURATION MANAGEMENT PLAN

Finding: A lack of a configuration management plan may impact the performance and quality of the system if unauthorized or untested changes are promoted between environments.

Industry Standards and Best Practices: IEEE 828-2012 – Standard for Configuration Management in Systems and Software Engineering states that the purpose of configuration management is to:

- Identify and document the functional and physical characteristics of any product, component, result, or service
- Control any changes to such characteristics
- Record and report each change and its implementation status
- Support the audit of the products, results, services, or components to verify conformance to requirements
- Establish and protect the integrity of a product or product component throughout its lifespan

Analysis: A configuration management plan has not yet been drafted. DataHouse plans to prepare a configuration management plan by October 11, 2019. Based on the current project plan, the eCMS Project was supposed to begin the Build stage of Phase 1. Although the recent DHS development will likely delay the start of the Build stage, not having a configuration management plan in place increases the concern that changes may not be properly tested, accepted and approved which may impact system performance or quality.

Recommendation: 2019.07.IT06.R1 – *Develop a formal configuration management plan.*

- Ensure the plan is in accordance with IEEE 828-2012 – Standard for Configuration Management in Systems and Software Engineering and includes the configuration management planning process, configuration identification process, configuration change control process, configuration status accounting process, configuration auditing process, interface control process, and release management process.
- DataHouse and DLIR should collaborate and agree on the configuration management plan purposes and processes that will best serve this project.

FINDING #: 2019.07.IT07	STATUS: OPEN	TYPE: RISK	SEVERITY: 2

TITLE: SECURITY MANAGEMENT PLAN NOT FINALIZED

Finding: Not having an approved security management plan in place may impact the security and privacy of the data.

Industry Standards and Best Practices: Industry best practices for developing an effective security management plan for systems where security and privacy of data are of paramount concern include the following:

- FIPS 199 – Standards for Security Categorization of Federal Information and Information Systems
- FIPS 200 – Minimum Security Requirements for Federal Information and Information Systems
- NIST 800-53 V4 – Security and Privacy Controls for Federal Information Systems and Organizations

Analysis: The Security Management Plan (version 0.0) was prepared by DataHouse on June 3, 2019 but was not yet approved by DLIR. Based on the current project plan, the eCMS Project was supposed to begin the Build stage of Phase 1. Although the recent DHS development will likely delay the start of the Build stage, not having a security management plan in place may result in improperly defined security requirements and may preclude the adequacy of the system to support the data needs of the system. Security controls should be defined in the security management plan and implemented as part of an organization-wide process that manages information security and privacy risk.

Recommendation: 2019.07.IT07.R1 – *Ensure the security management plan meets specific standards.*

- Consider the industry standards and best practices above.
- DataHouse and DLIR should collaborate and agree upon the specific standards that will best serve this project.

2019.07.IT07.R2 – *Finalize the security management plan.*

Appendix A: IV&V Criticality and Severity Ratings

IV&V CRITICALITY AND SEVERITY RATINGS

Rating assessment areas with risks and issues criticality ratings provide insight to DLIR eCMS Project management on where significant deficiencies are observed and immediate remediation or risk mitigation is required. As this report is the first IV&V report and provides a baseline assessment, no trends are reported. For future IV&V reports, trends may be identified between reporting periods.

TERMS

RISK
An event that has not happened yet.

ISSUE
An event that is already occurring or has already happened.

Criticality Rating

Criticality ratings have been given to each of the three major IV&V Areas, as well as, the overall rating of the project.

R — A **RED**, high criticality rating is assigned when significant severe deficiencies were observed and immediate remediation or risk mitigation is required.

Y — A **YELLOW**, medium criticality rating is assigned when deficiencies were observed that merit attention. Remediation or risk mitigation should be performed in a timely manner.

G — A **GREEN**, low criticality rating is assigned when the activity is on track and minimal deficiencies were observed. Some oversight may be needed to ensure the risk stays low and the activity remains on track.

NA — A **GRAY** rating is assigned when the category being assessed has incomplete information available for a conclusive observation and recommendation or is not applicable at the time of the IV&V review.

Severity Rating

Once risks are identified and characterized, Team Accuity will examine project conditions to determine the probability of the risk being identified and the impact to the project, if the risk is realized. We know that a risk is in the future, so we must provide the probability and impact to determine if the risk has a Risk Severity, such as Severity 1 (High), Severity 2 (Moderate), or Severity 3 (Low).

While a risk is an event that has not happened yet, an issue is something that is already occurring or has already happened. Team Accuity will examine project conditions and business impact to determine if the issue has an Issue Severity, such as Severity 1 (High/Critical Impact/System Down), Severity 2 (Moderate/Significant Impact), or Severity 3 (Low/Normal/Minor Impact/Informational).

1 — **SEVERITY 1:** High/Critical level

2 — **SEVERITY 2:** Moderate level

3 — **SEVERITY 3:** Low level

Appendix B: Industry Standards and Best Practices

STANDARD	DESCRIPTION
ADA	Americans with Disabilities Act
ADKAR®	Prosci ADKAR®: Awareness, Desire, Knowledge, Ability & Reinforcement
IEEE 828 -2012	IEEE Standard for Configuration Management in Systems and Software Engineering
DAMA-DMBOK2	DAMA International's Guide to the Data Management Body of Knowledge
HIPAA	Health Insurance Portability and Accountability Act of 1996 (HIPAA)
MARS-E 2.0	CMS Minimum Acceptable Risk Standards for Exchanges – Exchange Reference Architecture Supplement (MARS-E)
MITA 3.0	Medicaid Information Technology Architecture
TOGAF 9.2	The TOGAF® Standard, Version 9.2
COBIT 2019 Framework	Framework for customizing and right-sizing enterprise governance of information and technology
IEEE 1062-2015	IEEE Recommended Practice for Software Acquisition
ISO/IEC/IEEE 16326:2009	Systems and Software Engineering – Life Cycle Processes – Project Management
PMBOK® – Sixth Edition	Project Management Body of Knowledge (PMBOK®)
PROSCI	Leading organization providing research, methodology and tools on change management practices
IEEE 1012-2016	IEEE Standard for System, Software, and Hardware Verification and Validation
IEEE 1061-1998	IEEE Standard for a Software Quality Metrics Methodology
IEEE 730-2014	IEEE Standard for Software Quality Assurance Processes
ISO 9001:2015	Quality Management Systems – Requirements
ISO/IEC 25010:2011	Systems and Software Engineering – Systems and Software Quality Requirements and Evaluation (SQuaRE) – System and Software Quality Models

STANDARD	DESCRIPTION
BABOK® v3	Business Analyst Body of Knowledge
IEEE 29148-2018	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Life Cycle Processes – Requirements Engineering
ISO 16085:2006	Systems and Software Engineering – Life Cycle Processes – Risk Management
ISO/IEC TR 20000-11:2015	Information Technology – Service Management – Part 11: Guidance on the relationship between ISO/IEC 20000-1:2011 and service management frameworks: ITIL®
SAML v2.0	Security Assertion Markup Language v2.0
SoaML 1.0.1	Service Oriented Architecture Modeling Language
CMMI-DEV Version 1.3	Capability Maturity Model Integration for Development
IEEE 1016-2009	IEEE Standard for Information Technology – Systems Design – Software Design Descriptions
IEEE 12207-2017	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Software Life Cycle Processes
IEEE 14764-2006	ISO/IEC/IEEE International Standard for Software Engineering – Software Life Cycle Processes – Maintenance
IEEE 15289-2017	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Content of Life-Cycle Information Items (Documentation)
IEEE 24748-3-2012	IEEE Guide: Adoption of ISO/IEC TR 24748-3:2011, Systems and Software Engineering – Life Cycle Management – Part 3: Guide to the Application of ISO/IEC 12207 (Software life cycle processes)
IEEE 24765-2017	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Vocabulary
IEEE 26511-2018	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Requirements for Managers of Information for Users of Systems, Software, and Services
ISO/IEC/IEEE 12207:2017	Systems and Software Engineering – Software Life Cycle Processes
ISO/IEC/IEEE 23026:2015	Systems and Software Engineering – Engineering and Management of Websites for Systems, Software, and Services Information
ISO/IEC/IEEE 24748-2:2018	Systems and Software Engineering – Life Cycle Management – Part 2: Guidelines for the Application of ISO/IEC/IEEE 15288 (System life cycle processes)
ISO/IEC/IEEE 42010:2011	Systems and Software Engineering – Architecture Description

STANDARD	DESCRIPTION
SWEBOK V3	Guide to the Software Engineering Body of Knowledge
ISO/IEC 27002:2013	Information Technology – Security Techniques -- Code of Practice for Information Security Controls
FIPS 199	Federal Information Processing Standard Publication 199, Standards for Security Categorization of Federal Information and Information Systems
IEEE 1044-2009	IEEE Standard Classification for Software Anomalies
ISO/IEC/IEEE 16326:2009	International Standard – Systems and Software Engineering – Life Cycle Processes – Project Management
IEEE 1484.13.1-2012	EEE Standard for Learning Technology – Conceptual Model for Resource Aggregation for Learning, Education, and Training
IEEE 15288-2015	International Standard – Systems and Software Engineering – System Life Cycle Processes
ISO/IEC/IEEE 29148-2018	International Standard – Systems and Software Engineering – Life Cycle Processes – Requirements Engineering

Appendix C: Interviews, Meetings, and Documents

INTERVIEWS

DATE	INTERVIEWEE
05.06.19	Initial IV&V Interviews with Scott Hee Wai (Program Specialist, Lotus); JoAnn Vidinhar (DCD Administrator, Executive Sponsor); Royden Koito (Business Manager); Marla Takahama-Stark (DLIR Project Manager, Technical Advisor)
05.07.19	Initial IV&V Interviews with Teri Watanabe (DataHouse Project Manager); Rodney Murashige (DataHouse Lead Business Analyst)
05.08.19	Initial IV&V Interviews with Jim Shiba (DataHouse Solution Architect); Hong Phan (DataHouse Project Sponsor); Marla Takahama-Stark (DLIR Project Manager); Alfred Bonilla (State of Hawaii ETS)

MEETINGS

DATE	MEETING DESCRIPTION
05.07.19	Weekly Project Status Meeting
05.09.19	Prep for Design Sessions facilitated by DataHouse (Go To Meeting)
05.13 - 05.24.19	Case Management Algorithm and Design Sessions (various)
05.16.19	Preview of Week 2's Design Workshop Sessions – User Interface & Workflow
05.17.19	Weekly Friday EDPSO Meeting
05.20 - 05.24.19	eightCloud Design Sessions (various)
05.23.19	Meeting with eightCloud and JoAnn regarding the UI
05.24.19	Meeting with DataHouse to gather information for DCD networking
05.24.19	Meeting with eightCloud regarding Salesforce best practices

MEETINGS (CONTINUED)

DATE	MEETING DESCRIPTION
05.29.19	Walkthrough of Sample Business Process Improvement with DataHouse
06.06.19	Review of DCD IV&V Deliverables and review of project activities
06.13.19	IV&V Status Update with ETS
06.18.19	Weekly Project Status Meeting
06.18.19	IV&V Status Update with DCD
06.19.19	IV&V Findings Debrief with DLIR, DCD, DataHouse and ETS
06.26.19	Case Management Design Session

DOCUMENTS

TYPE	DOCUMENT
Request for Proposal	State of Hawaii DLIR DCD RFP No. RFP-17-002-DCD (Release Date April 12, 2018)
DataHouse Proposal	DataHouse ECMS Best and Final Offer (BAFO) Proposal (Dated June 20, 2018)
Request for Proposal	State of Hawaii DLIR DCD IV&V RFP No. RFP-18-001-DCD (Release Date December 28, 2018)
Contract	Contract between State of Hawaii and DataHouse Consulting Inc. (Effective August 27, 2018)
Project Plan	DataHouse Project Management Plan 1.0 (Updated 10/04/2018)
Project Plan	DataHouse Project Management Plan 1.1 (Updated 04/25/2018)
Project Plan	DataHouse Project Management Plan 1.2 (Updated 06/03/2019)
Business Case Study	DLIR DCD Business Process Optimization & Business Case Project (Dated May 2016)
Status Report	DataHouse Project Status Report (Status Date 02/20/2019 for reporting period 08/27/2018 – 01/31/2019)
Status Report	DataHouse Semi-Monthly Project Status Report (Status Date 04/24/2019 for reporting period 04/01 – 04/15/2019)
Status Report	DataHouse Semi-Monthly Project Status Report (Status Date 05/05/2019 for reporting period 04/16 – 04/30/2019)
Status Report	DataHouse Semi-Monthly Project Status Report (Status Date 06/11/2019 for reporting period 05/16 – 05/31/2019)
Status Report	DataHouse Semi-Monthly Project Status Report (Status Date 06/21/2019 for reporting period 06/01 – 06/15/2019)
Requirements	Content Management Requirements Version 1.4 (Updated 02/15/2019)
Requirements	Content Management Requirements Addendum Version 1.0 (Updated 11/30/2018)
Requirements	Case Management Requirements Version 1.2 (Updated 04/09/2019)
Requirements	Requirements Traceability Matrix (Revision Date 05/28/2019)
Requirements	Requirements DCD Flows (Requirements_DCD Flows_20190215_11x17.pdf)

DOCUMENTS (continued)

TYPE	DOCUMENT
Flowcharts	DCD Major Processes Flowcharts (DCD Flows_Final (1))
Risk and Issues	RAID (Risk Action Issue Decision) Log
Design	Content Management Design Version 1.0 (Updated 05/06/2019)
Technology	DCD To Salesforce Connectivity MuleSoft Diagram
Technology	DLIR DCD System Overview
Technology	DCD RFP Oral Presentation Final
Technology	DCD eCMS High-Level Technical Design Version X.X (Draft and Incomplete)
Project Plans	Document Management Plan Version 0.0 (Date Created and Updated 06/03/2019)
Project Plans	Quality Management Plan Version 0.0 (Date Created and Updated 06/03/2019)
Project Plans	Quality Management Plan Version 0.1 (Date Created and Updated 06/23/2019)
Project Plans	Security Management Plan Version 0.0 (Date Created and Updated 06/03/2019)
Project Plans	Security Management Plan Version 0.1 (Date Created and Updated 06/23/2019)
Project Plans	Content Management Version & Migration Version 0.0 (Date Created and Updated 06/13/2019)
Project Plans	DLIR DCD eCMS Risk Management Plan Version 1.0 (Dated 06/03/2019)
Schedule	Detailed eCMS Project Tasks by Area (eCMSLOE (HI State DLIR DCD SFDC Implementation).xlsx)
Costs	Proposed Payment Schedule
Costs	DataHouse Payment Listing
BPR	BPR Overview
Document Request	Response to Accuity's Initial Document Request List (Response 06-04-2019)
Document Request	Response to Accuity's Initial Document Request List (Response 06-12-2019)

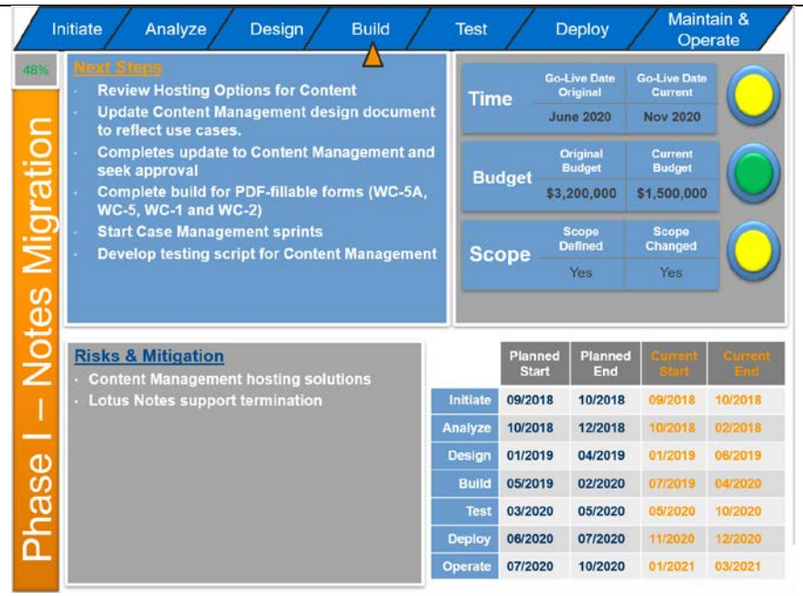
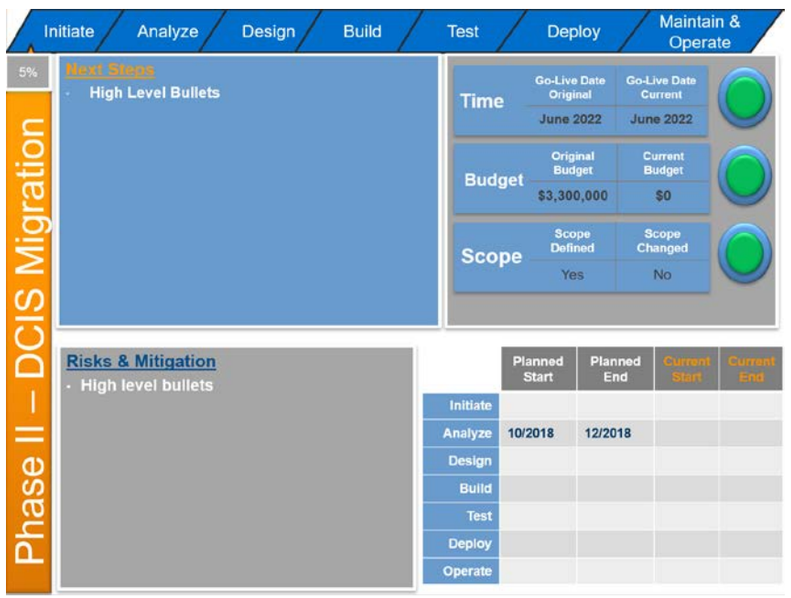
Appendix D: Comment Log on Draft Report

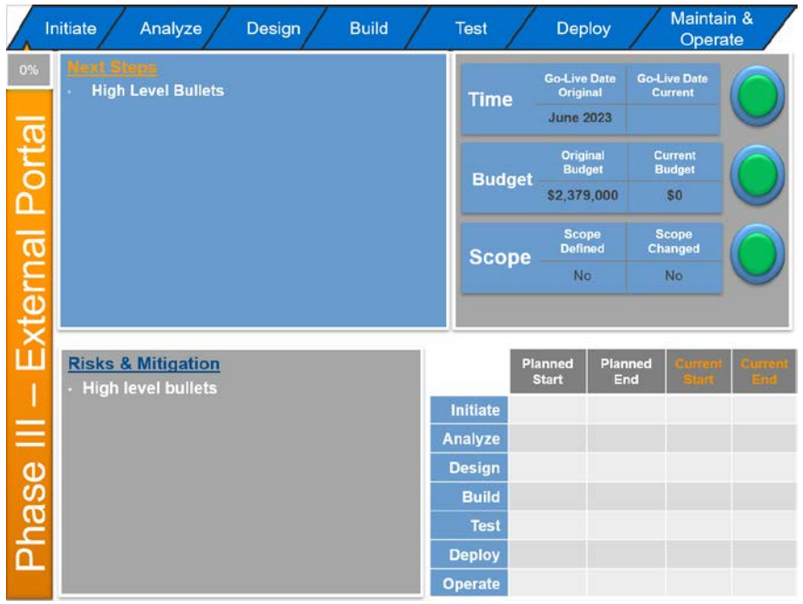
<table>
<tr><th colspan="6">DLIR DCD eCMS Project: IV&V Document Comment Log</th></tr>
<tr><td colspan="2"></td><td colspan="4">Accuity LLP
CERTIFIED PUBLIC ACCOUNTANTS</td></tr>
<tr><th>ID #</th><th>Page #</th><th>Section Title/Area</th><th>Comment</th><th>Commenter's Organization</th><th>Accuity Resolution</th></tr>
<tr><td></td><td></td><td></td><td>PROJECT MANAGEMENT</td><td></td><td></td></tr>
<tr><td>1</td><td>05-06</td><td>Project Assessment</td><td>The project is broken down into three different phases as noted in BAFO submitted on 06/20/2018 as follows:

Note: The Gartner Assessment is Phase I. DCD is now in Phase II of which consists of 3 phases as indicated in the DataHouse BAFO

<table>
<tr><th>Phase II Project Phases</th><th>Budget</th><th>Actual</th><th>% Allocation</th><th>% Completion</th></tr>
<tr><td>Phase I – Notes Migration</td><td>$3,200,000</td><td>$1,500,000</td><td>40%</td><td>48%</td></tr>
<tr><td>Phase II – DCIS Migration</td><td>$3,300,000</td><td>$0</td><td>40%</td><td>05%</td></tr>
<tr><td>Phase III – External Portal</td><td>$2,379,000</td><td>$0</td><td>20%</td><td>00%</td></tr>
</table>
</td><td>DataHouse</td><td>Revised the Overall Progress percent completion to 48% for Phase 1 and included explanation based on a document outlining completed project activities provided by DataHouse. Accuity was unable to recalculate the percentage complete for Phase 1; however, will continue to assess new information received and progress in this area in the next Monthly IV&V Review report. Updated report to reflect additional information.</td></tr>
</table>

			Phase 1 – ECMS FOUNDATION & NOTES MIGRATION – July 2018-June 2020 o Project planning o Install base ECM, SF and integration platforms o Conduct planning and analysis o Architect new ECMS o Analyze and plan data migration o Plan phase 1 sprints o Build and validate – Core CM objects + Lotus Notes related sprints o Integrate with DCIS o Migrate Lotus Notes data o Test and train o Deploy **Phase 2 – DCIS MIGRATION - July 2020-June 2022** o Plan phase 2 sprints o Build and validate – DCIS related sprints, additional workflows, fiscal module o Build interfaces o Migrate DCIS data o Test and train o Deploy **Phase 3 - PORTAL - July 2022-TBD** o Build portals o External agency interfaces o Additional workflows o Mobile Project Team decided to break phase I into two parts; 1A for Content Migration and 1B for Lotus Notes Migration. Due to the fact that Phase 1A only impact LIBRAB users (10 total), Project Team did not see any risks or impact of shifting cutover date out due to the hosting solution changes. The overall delay of the Phase 1B solution was due to the fact that the Project Team had to conduct requirements for Phase II – DCIS Migration due to reduction of DCD resources for retirement. Not capturing these requirements will impact overall project downstream in Phase II. This push the overall timeline for Phase I out.		The Accuity report already reflects reasons for the delays “include additional time for requirements gathering, some Phase 2 work that was moved up to Phase 1, late completion of deliverable approvals, and delayed procurement of scanners”. No change to the report.

			 		DataHouse has started creating dashboards for Phases I to III. Accuity will continue to receive and monitor them for future Monthly IV&V Review reports. No change to the report.

					DataHouse has started creating dashboards for Phases I to III. Accuity will continue to receive and monitor them for future Monthly IV&V Review reports. No change to the report.
2	05-06	Project Assessment	It should be noted the DCD eCMS Modernization Project began in 2014 when Gartner was hired to assess if DCD warranted modernization. Refer to the general overview timeline. DCD eCMS Modernization Proje As a result, from Gartner's reports, DCD began planning to estimate the budget for the eCMS modernization Project. DLIR DCD MODERNIZATION PF	DLIR-DCD	Accuity is aware that Gartner performed work prior to the eCMS modernization project and will review the additional information provided for the next IV&V Review report. See correction made on Comment ID #7.
3	11	Benefit Realization	Attached is the presentation that DCD Executive Sponsor presented the Legislation on October 19,2018 which clearly show that DCD will not see any benefit realization of the project until completion of Phase I.	DLIR – DCD DataHouse	Although a 5-year Cost-Benefit Summary graph is provided, it is not clear what metrics were used to determine the achievement of the desired level of improvement and benefits. Accuity's recommendation

			Finance Committee presentation October		is to clearly formalize measurable goals and success metrics in a project charter, and to use this performance data to monitor and evaluate project success. No change made to the report.
4	11	Program Governance	Attached is the DCD Working Group Roster (11/2017) which has been in existence since 2016. Group meet to update annually associative and various stakeholders throughout the year. DCD Working Group Roster v2017 Project Status Report v20180907.p The DCD Executive Committee (serves as Steering Committee ad Change Control Board) was created since the onset of the project. The Executive Committee consists of: DCD Director, OETS, EDPSO, and DCD eCMS Admin Group. DLIR DCD will update the Project Management Plan to include the committee members	DLIR – DCD	Accuity will assess new information received and progress in this area in the next Monthly IV&V Review report. No change to the report.
5	13	(FINDINGS #2019.07.PG02) LACK OF FORMAL GOVERNANCE	Refer to the following documents: • Project Status Report v20180907 – lists the affiliated groups (See above) • DCD Working Group Roster v2017 (see above) • DCD Working Group Summary Report v20161214 20161214WCWG-Summary.pdf	DLIR-DCD	Accuity will assess new information received and progress in this area in the next Monthly IV&V Review report. No change to the report.
6	16	(FINDING #2019-07-PG05) CLEAR AND MEASURABLE GOALS & SUCCESS METRICS NOT	Goals and Success Criteria are defined in the RFP. In summary if any of the systems identified for modernization is still required to run after completion of project then this is a failed Project and benefit realization identified will not be met.	DataHouse	Goals and success metrics should be formalized in a project charter and used to monitor project and contractor performance. No change to the report.

		DEFINED OR MONITORED			
7	16	(FINDINGS #2019.07.PG05) FEASIBILITY STUDY OR PROJECT CHARTER, CLEAR AND MEASURABLE GOALS & SUCCESS METRICS NOT DEFINED OR MONITORED	Refer to the following documents: • DLIR-17-002-DCD RFP • PMP v1.2 – DCD project charter is being worked on currently and will be incorporated with the DataHouse PMP • Project Return on Investment v20180830  Project ROI.pptx • Feasibility Study Business Case RFP Development and Vendor Selection v201502 by Garner  Feasibility Study Business Case RFP D • Director's Update Briefing v20150930  Directors Update Briefing v20150930.p • Project Advisory Committee (PAC)  Project Advisory Counsil Meeting 09  DLIR DCD Modernization - Pro	DLIR – DCD	Reviewed Gartner Feasibility Study and revised report that originally stated that a feasibility report was not prepared on pages 11 and 16. Updated report to reflect correction. The Project Charter should be owned and maintained by DLIR DCD. The DataHouse Project Management Plan should be owned and maintained by DataHouse. Accuity will look at the additional documentation and assess progress in this area in the next Monthly IV&V Review report. No change to the report.
8	18	Project Management	In the beginning, there were growing pains – PM's need to understand each other's project management styles, terminology, and work processes. With time, the DataHouse PM and DLIR DCD PM developed good synergy (e.g. talk and/or text, email, conference call daily as well as have weekly PM Status Meetings).	DLIR – DCD	Accuity will assess progress in this area in the next Monthly IV&V Review report. No change to the report.
9	19	(FINDING #2019.07.PM01) ANALYSIS	Strike out "*...does not currently...However she*"	DLIR-DCD	The intent of this observation was to be a positive observation regarding DLIR's hardworking and collaborative Project Manager. Accuity reformatted the page to emphasize that it was a positive

					finding. Accuity also received additional examples of the PM's Project Management experience. Updated report to reflect additional information.
10	21	(FINDING #: 2019.07.PM03) INEFFECTIVE DELIVERABLE REVIEW AND ACCEPTANCE PROCESS	For Requirements and Design documentation, there have been walkthrough and review sessions with DCD users: • 01/08/2019 – Case Management Requirements review (originally scheduled for 12/14/2018 but rescheduled due to other DLIR priority for IV&V contracting and resource leaves) • 01/18/2019 – Content Management Requirements review • 01/31/2019 - Review Questions/Comments for Case Requirements feedback • 03/18/2019 – Preview to the DCD core team of the 03/27-29 Demonstration of Content Management • 03/21/2019 – Review of Content Management Design after 03/06 delivery • 03/27-29/2019 – On site demonstration of Content Management Design (for Datacap and FileNet use cases) • 06/14/2019 – Immediately after 06/13 delivery of document, a meeting was held with DCD and LIRAB to explain Taxonomy information for Content Management's Conversion & Migration document. • 07/11/2019 – Walkthrough of or Content Management's Conversion & Migration document with DCD and LIRAB. Was to be held on an earlier date but rescheduled due to illness and resource leave. User feedback and questions were addressed and incorporated into draft version 0.1 of document on 07/22, which resulted in finalizing of version to 1.0 with no further updates on 07/31 and DCD approval. • 07/18/2019 – Walkthrough of Case Management Design document after 07/08 delivery. Was to be conducted on an earlier date but rescheduled due to illness and resource leave. User feedback and questions were addressed and incorporated into next draft version of document, which resulted in finalizing version to 1.0 and DCD approval. Case Management Design Work Sessions with Users: • 05/13-17/2019, 06/17/2019 - Extensive algorithm sessions were held with DCD users to review and capture key algorithms for the Case	DataHouse	Based on comment ID #11, revised the date from July to June and corrected the sentence to: "Based on informal IV&V recommendations, DataHouse and DLIR started to implement joint deliverable review meetings in June 2019." Updated report to reflect correction.

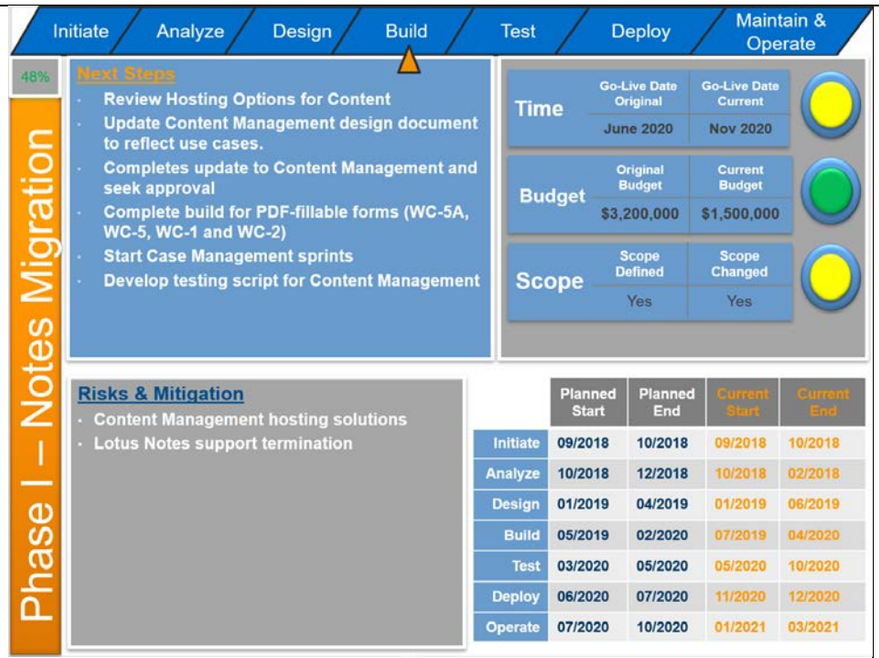
			Management system. Information was presented in the format that was used in the Case Management design documentation. After the initial round of sessions, draft version provided for review and follow up sessions with users. • 05/20-24/2019, 06/24-28/2019 - Two weeks of daily Case Management design workshop sessions held with DCD, R&S and LIRAB users to re-validate existing process flow, then show/review of proposed wireframes and discussions regarding workflow.		
11	21	(FINDING #: 2019.07.PM03) INEFFECTIVE DELIVERABLE REVIEW AND ACCEPTANCE PROCESS	DLIR DCD's goal is to accomplish tasks in a practical and effective manner. DLIR DCD may slow down processes beyond the target dates to assure documents are fully understood and accepted. In late May 2019, DLIR DCD advised DataHouse that preliminary reviews or briefs will be required prior to submittal of comments. The June 14th document (see above) initiated this new process.	DLIR DCD	Reference Comment ID #10 above.
12	22	(FINDING #: 2019.07.PM04) PROJECT PROGRESSION WITHOUT FORMAL AGREEMENTS WITH DHS	Please refer to the attached documents for comments DLIR-DCD IVV Findings - 2019.07.PM	DataHouse	Revised Finding language and corrected the sentence to: "Furthermore, the eCMS Project advanced for 10 months without a formal MOU between DLIR and DHS with reliance on the DataHouse Project Sponsor to lead discussions due to her experience with DHS." Removed the words "in some cases without DLIR representation" from the Analysis language and corrected the sentence to: "Once the eCMS Project was underway, the MOU discussions with DHS were primarily led by the DataHouse Project Sponsor." Revised Recommendation language from "participate" to "lead" and corrected the sentence to: "DLIR should lead all discussions and negotiations of vendor contracts or agency agreements." Updated report to reflect corrections above.
13	23	(FINDING #: 2019.07.PM05) LACK OF CLARITY OF DEVELOPMENT METHODOLOGY	SCRUM starts with Build of Case Management in August 2019. Sprint planning commenced after the delivery of the Case Management Design document on 07/08/2019. Epic-Sprints will be defined by end of July and updated into the project plan along with resources, including DCD.	DataHouse	Accuity will assess progress in this area in the next Monthly IV&V Review report. No change to the report.
14	24	(FINDING #: 2019.07.PM06) INEFFECTIVE	The DataHouse and DCD Project Managers are in communications on a regular basis via email, phone calls and virtual meetings.	DataHouse	Accuity will assess progress in this area in the next Monthly IV&V Review report. No change to the report.

		COMMUNICATION BETWEEN DATAHOUSE AND DLIR PROJECT TEAMS			
15	25	(FINDING #: 2019.07.PM07) NEED FOR TARGETED PROJECT COMMUNICATIONS FOR IMPACTED STAKEHOLDERS	Project Management Plan, version 1.2 was approved by DCD on 06/13/2019.	DataHouse	Accuity received a copy of the Deliverable Approval Form showing approval by DLIR DCD on 06/13/19. Updated report to reflect the approved document.
16	25	(FINDING #: 2019.07.PM07) NEED FOR TARGETED PROJECT COMMUNICATIONS FOR IMPACTED STAKEHOLDERS	DLIR – DCD PM is actively engaged with the various DLIR groups. These same groups will also be part of the Test Team, including external stakeholders. Status Report Project Status Report v20180907 (see above)	DLIR – DCD	Accuity will assess progress in this area in the next Monthly IV&V Review report. No change to the report.
17	26	(FINDING #: 2019.07.PM08) NEED FOR A STRUCTURED OCM APPROACH	Baseline information was gathered from the Stakeholders and Users at the start of the Requirements Phase via Stakeholder and User questionnaires (surveys). The results were summarized along with person's concerns and perceived success criteria for the project. Questionnaires are below.  QuestionnaireStakeholder_LastNameFirstN  QuestionnaireUser_LastNameFirstName.pdf	DataHouse	Accuity noted the user questionnaire responses as part of the Content Management Addendum Version 1.0. Accuity did not receive the Stakeholder questionnaire responses. Accuity to inquire how this data will be used for OCM activities and assess this area in the next Monthly IV&V Review report. No change to the report.
18	27	(FINDING #: 2019.07.PM09) PROJECT RISKS	The Risk, Action, Issue and Decision log is used to capture and track these items until resolution. These are part of the status reports and	DataHouse	Accuity received an updated RAID Log reflecting that the two identified issues were closed prior to 06/30/19. Updated report to reflect correction above.

		AND ISSUES HAVENOT BEEN CLEARLY IDENTIFIED, TRACKED, OR REPORTED	reviewed/discussed at the Weekly Project Management Status meetings with DCD and DataHouse Project Managers and Sponsors. As of 06/30/2019: • Risk – Three risks exist. o Risk #1 is related Phase 2 efforts and has been addressed with meetings and sharing of documentation with DCIS resources. Risk is being kept open during the Phase 1 schema development in order to keep focus on potential impacts from DCIS. o Risk #2, Schedule for Content Management items delayed due to required items not being delayed, had multiple Actions tracking to it. One was the referenced Action Item #16, Provide DHS connectivity information. This action item was being used to track the progress of obtaining the Memorandum of Understanding between DCD and DHS. o Risk #3, Resources for Content Management – Closure is imminent with the approval of the Content Management Design document and the building and access to the AWS Content Management environments. • Issues – Two of two identified issues were closed. o Issue #1, Newly designed forms do not always allow for the entry of the maximum number of characters with even the use of the smallest recommended font size (8). Addressed as of 05/24 via Decision #10, where use of supplemental page will be used at the end of form, as needed. o Issue #2, IBM Datacap version will be out of support at end of April 2019. Addressed as of 06/25 with use of cloud solution of IBM Datacap and FileNet with latest versions since DHS is not ready to provide shared services to DLIR or any other department for their IBM Content Management platform.		

19	27	(FINDING #: 2019.07.PM09) PROJECT RISKS AND ISSUES HAVENOT BEEN CLEARLY IDENTIFIED, TRACKED, OR REPORTED	DLIR-DCD created a Risk Management Plan v1.0 dated 20190603 – it is in the process of incorporated into the PMP. DLIR-DCD has an informal risk/issue log that will be incorporated into a formal tracking spreadsheet.  DLIR DCD eCMS Risk Management Pl	DLIR-DCD	Accuity will assess progress in this area in the next Monthly IV&V Review report. No change to the report.
20	28-29	(FINDING #: 2019.07.PM10) PROJECT REQUIREMENTS ARE INCOMPLETE AND LACK SUFFICIENT DETAIL	The Requirements Traceability Matrix (RTM) is being updated to include 1) contract requirements for three project phases with high level reference to the DCD Process Flows, 2) requirements from Case Management Requirements, v1.2, 3) requirements from Content Management Design, v.1.0.	DataHouse	Accuity will assess progress in this area in the next Monthly IV&V Review report. No change to the report.
21	30	(FINDING #: 2019.07.PM11) NEED TO IDENTIFY AND ADDRESS BPR OPPORTUNITIES	Change log is being used to capture items for potential improvements brought up during development that are not in scope based on Requirements+. Phased priority is being tracked in the log.	DataHouse	Accuity will assess progress in this area in the next Monthly IV&V Review report. No change to the report.
22	30	(FINDING #: 2019.07.PM11) NEED TO IDENTIFY AND ADDRESS BPR OPPORTUNITIES	Refer to the following documents: • Legislative Update Briefing v20151130  Gartner leg.pdf • Alternatives Analysis Workshop v201512  State of HI DLIR Alternatives Analysis • Business Case for Disability Compensation Modernization v20160104	DLIR -DCD	Accuity will assess progress in this area in the next Monthly IV&V Review report. No change to the report.

			 Business Case for DCD Modernization • Business Process Optimization and Business Case Kickoff Presentation v201508  Kickoff Presentation v20150		
23	31	(FINDING #: 2019.07.PM12) LACK OF FORMALIZED COST MANAGEMENT PRACTICES	Attached is the presentation that DCD Executive Sponsor presented the Legislation on October 19,2018 which show the overall budget for the DCD Modernization Project.  Finance Committee Presentation Octob Below is the overall dashboard for the Phase I, which show payment schedule to DataHouse is aligned to the overall project execution.	DataHouse	Accuity recommends that a comprehensive project budget and schedule of long-term operational costs is prepared, as well as, regular cost reports for management and the executive steering committee. Accuity will work with DataHouse to understand their dashboards and assess progress in this area in the next Monthly IV&V Review report. No change to the report. DataHouse has started creating dashboards for Phases I to III. Accuity will continue to receive and monitor them for future Monthly IV&V Review reports. No change to the report.

			 Although scope has change due to hosting of DataCap and FileNet, DCD is working with DataHouse on zero ($0) dollar change request.		
24	31	(FINDING #: 2019.07.PM12) LACK OF FORMALIZED COST MANAGEMENT PRACTICES	After discussions with DataHouse, DCD decided to remove the software license cost obligations from DataHouse.	DLIR – DCD	General statement. These decisions should be logged and documented in a formal change log. No change to the report.
25	32	(FINDING #: 2019.07.PM13) INADEQUATE SCHEDULE MANAGEMENT PRACTICES	Date changes to the Project Plan are documented/explained in the individual tasks and also summarized in the Status Reporting period in which the date change occurred. This is reviewed with DCD Project Manager and Project Sponsor.	DataHouse	Accuity will assess progress in this area, including changes to milestones and sprint planning, in the next Monthly IV&V Review report. No change to the report.

			Changes to milestones are documented and approved via the Project Management Plan. Sprint planning for Build was to commence after the Case Management Design document was completed. Having this document allowed for the validation of the detailed plan dates. Epic-sprint dates will be added to the project plan in late July as a result of the sprint planning.		
26	33	(FINDING #: 2019.07.PM14) INADEQUATE PROJECT RESOURCES	As indicated by IV&V, the project plan was too high level and needed to include detailed tasks from lower level plans. These are being added to Project Plan along with resourcing.	DataHouse	Accuity will assess progress in this area in the next Monthly IV&V Review report. No change to the report.
			TECHNOLOGY		
27	35-36	(FINDING #: 2019.07.IT01) ORIGINAL PROPOSED SOLUTION IS NO LONGER A FEASIBLE SOLUTION	Please refer to attached for comments related to this finding. DLIR-DCD IVV Findings - 2019.07.ITC	DataHouse	After further analysis we agree that the lack of an MOU will only impact content management hosting infrastructure and not the entire solution. Revised language throughout report from "Original Proposed Solution is No Longer a Feasible Solution" to: "Proposed Content Management Hosting Infrastructure Solution is No Longer Feasible." Add following language into Analysis section for clarification "Although this issue relates to the proposed hosting infrastructure solution for Content Management, this is an opportunity for both DataHouse and DLIR to reassess the total solution considering all updated technological opportunities available today." Revised Recommendation from "Evaluate other solution alternatives for an alternative solution" to "Evaluate other total solution alternatives." Updated report to reflect corrections above.
28	36	(FINDING #: 2019.07.IT01) ORIGINAL PROPOSED SOLUTION IS NO LONGER A FEASIBLE SOLUTION	Gartner's final analysis recommended an enterprise solution which is support by the Gartner Magic Quadrant Refer to Alternatives Analysis Workshop v201512 (See above #22)	DLIR-DCD	The Gartner Report referenced is dated 01/04/2016, over 3 years ago. At the time of the Initial IV&V Report, as the leveraging of the DHS FileNet was no longer an option, Accuity recommended that a full technical analysis be conducted as a best practice so the project owner could be confident that sufficient analysis was conducted to ensure a complete and successful working solution. No change to the report.
29	37	(FINDING #: 2019.07.IT02) UNCLEAR	CORRECTION TO THE FOLLOWING:	DataHouse	Accuity received a copy of the Deliverable Approval Form showing approval by DLIR DCD on 05/06/19. Updated report to reflect the approved document.

		INTERFACE SOLUTION BETWEEN CASE AND CONTENT MANAGEMENT	**Analysis:** Case Management is currently in the design phase and design documents have not been provided. Content Management Design (version 0.0) document was drafted by DataHouse on March 6, 2019 but was not approved by DLIR. The recent DHS development will require design documents to be updated after an alterna solution is selected. However, even prior to this development, the Content Management design documents w drafted based on requirements documentation that is incomplete (refer to finding 2019.07.PM10). The requirem document deficiencies should be remediated immediately and the design documents updated accordingly. The Content Management Design document was finalized as version 1.0 on **05/06/2019** and approved by DCD. It is in the DCD SharePoint's Document Library > Design > Content Management.  The "recent DHS development" did not change the interface options. The change was in the location of the Content Management platform from DHS to another location. e.g., Cloud Provider. During the Case Management Design phase, the following meetings were held and documentation provided for discussion: • 05/24/2019 – Gather Information for DCD Networking for eCMS – Reviewed the potential integration solution with DLIR, DCD, OETS, IV&V and DataHouse project team members. Diagrams that were shared during the meeting and the draft minutes were shared via email to participants on 05/26/2019 with deadline for revisions. No changes so finalized "as is". Diagrams and minutes are posted in DCD SharePoint's Document Library > Project Management > Minutes. The main integration diagram that was reviewed at this meeting is attached below. Other diagrams were provided to drive discussion for the integration points.  dcd_To_SF_Connectivity MuleSoft.pdf • 06/24-28/2019 – During the week of on-site Case Management Design sessions, the updated integration solution was reviewed with DCD. POST 06/30/2019 -		The PDF document provided "dcd_To_SF_Connectivity MuleSoft.pdf" presents MuleSoft as the API solution. As such, Accuity was still unclear about the interface solution. We understand that subsequent to the IV&V report, DataHouse presented AWS and DataRest. Accuity will review the updated information and assess progress in this area in the next Monthly IV&V Review report. No change to the report regarding the interface solution.

			On 07/08/2019, the draft version 0.0 of the Case Management Design was delivered to DCD via the DCD SharePoint's Document Library > Design > Case Management. System Architecture including the Integration is documented in section 4. Walkthrough of document, including the review of interface/integration points was completed on 07/18/2019 with DCD team. DCD feedback and other updates are documented in draft version 0.1 of the Case Management Design. Updated draft version 0.1 posted in the DCD SharePoint's Document Library > Design > Case Management.		
30	38	(Finding # 2019.07.IT03) DESIGN DOCUMENTS BASED ON INCOMPLETE REQUIREMENTS	CORRECTION TO THE FOLLOWING: **Analysis:** Case Management is currently in the design phase and design documents have not been provided. T Content Management Design (version 0.0) document was drafted by DataHouse on March 6, 2019 but was not approved by DLIR. The recent DHS development will require design documents to be updated after an alternat solution is selected. However, even prior to this development, the Content Management design documents we drafted based on requirements documentation that is incomplete (refer to finding 2019.07.PM10). The requireme document deficiencies should be remediated immediately and the design documents updated accordingly. The Content Management Design document was finalized as version 1.0 on **05/06/2019** and approved by DCD. It is in the DCD SharePoint's Document Library > Design > Content Management. Documents eCMS Version Date | eCMS Version | eCMS Doc Type | Comments | Title | Name 5/6/2019 | 1.0 | Design | (12, 13) 1.0 finalized from draft v0.2. | Content Management Design | Design_DCDeCMS_ With the completion of the Case Management Design efforts, the draft version 0.0 of the Case Management Design document was delivered to DCD on 07/08/2019 via the DCD SharePoint's Document Library > Design > Case Management. DCD feedback and other updates are documented in draft version 0.1 of the Case Management Design. Updated draft version 0.1 posted in the DCD SharePoint's Document Library > Design > Case Management.	DataHouse	Accuity received a copy of the Deliverable Approval Form showing approval by DLIR DCD on 05/06/19. Updated report to reflect the approved Design Document v 1.0.
31	39	(FINDING #: 2019.07.IT04) DATA CONVERSION PLAN BASED	The Content Management Conversion & Migration document was finalized as version 1.0 on 07/31/2019 and approved by DCD. It is in the DCD SharePoint's Document Library > Design > Content Management. Conversion requirements are in this document, section 2.5, Requirements.	DataHouse	At the time, of the report, the solution was still unknown. Accuity will review the approved document and assess progress in this area in the next Monthly IV&V Review report. No change to the report.

		ON INCOMPLETE REQUIREMENTS	The Content Management Conversion & Migration document is not dependent on prior Content Management environment (finding 2019.07.IT01). While an environment is required, one was selected as of 07/16/2019 and is in progress of being built.		Accuity agrees that the Content Management Conversion & Migration document is not dependent on the Content Management environment. Updated report to reflect the change above.
32	40	(FINDING #: 2019.07.IT05) QUALITY MANAGEMENT PLAN NOT FINALIZED AND QUALITY ASSURANCE RESOURCE NOT ASSIGNED	Regarding Quality Assurance Resource not being assigned, resource(s)have been identified, we are not in Test/QA Test phase so this resource is not assigned at this time. QA resource Danny Kennison was assigned to project via the contract and is available as needed.	DataHouse	Removed the statement that the QA Lead "is not on the project team and no replacement resources have been assigned" to the QA Lead "is not assigned to the project at this time." A quality management process and resource should have been determined to provide quality reviews on project deliverables. We were informed that the DataHouse PM has been performing a QA role for deliverables. Accuity will review this process and also assess the QA responsibilities during the Test/QA Test Phases for the next Monthly IV&V Review report. Updated report to reflect the change above.
33	41	(FINDING #: 2019.07.IT06) LACK OF A CONFIGURATION MANAGEMENT PLAN	Originally thought the Accuity request for Configuration Management Plan was the Content Management's "System Installation/Configuration" Document which the project plan was showing a delivery on 10/11/2019. If this is not the case, then is this a separate document being requested?	DataHouse	Yes, a configuration management plan is a document that describes how design products are under configuration control and formally approved. No change to the report.
			APPENDIX C		
34	49	DOCUMENTS	DataHouse Project Management Plan 1.2 (Updated 06/03/2019) –Pending approval by DCD **Version 1.2 was approved by DCD on 06/13/2019.**	DataHouse	Accuity received a copy of the Deliverable Approval Form showing approval by DLIR DCD on 06/13/19. Updated report to reflect the approved document.
35	50	DOCUMENTS	Content Management Design Version 0.0 Draft (Updated 03/07/2019) – Pending approval by DCD **There was a draft version 0.2 with DCD feedback and updates (updated 05/03/2019) that was finalized as Version 1.0 (updated 05/06/2019) and approved by DCD on 05/06/2019.**	DataHouse	Accuity received a copy of the Deliverable Approval Form showing approval by DLIR DCD on 05/06/19. Updated report to reflect the approved document.

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