September 8, 2020

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

The Honorable Scott K. Saiki,
Speaker, and
Members of The House of Representatives
Thirtieth 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
Chief Information Officer
State of Hawai‘i

Attachment (1)
Disability Compensation Division’s Modernization Project – Electronic Case Management System (eCMS)

MONTHLY ON-SITE IV&V REVIEW REPORT

July 29, 2020 | Version 1.0

REPORT FINALIZED

August 28, 2020
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<td>08/07/20</td>
<td>Monthly On-site IV&amp;V Review Report Draft created</td>
<td>Julia Okinaka</td>
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<td>08/28/20</td>
<td>Monthly On-site IV&amp;V Review Report Final updated to reflect no comments submitted in Appendix F</td>
<td>Julia Okinaka</td>
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EXECUTIVE SUMMARY

BACKGROUND

The State of Hawaii (State), 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). DLIR contracted Accuity LLP (Accuity) to provide Independent Verification and Validation (IV&V) services for the eCMS Project.

The Initial On-Site IV&V Review Report (IV&V Initial Report) was issued on August 30, 2019 and provided an initial assessment of project health as of June 30, 2019. Refer to the full Initial Report for additional background information on the eCMS Project and IV&V. The Monthly On-Site IV&V Review Reports (IV&V Monthly Reports) build upon the Initial Report to update and continually evaluate project progress and performance. Refer to Appendix E: Prior IV&V Reports for a listing of prior reports.

The project is in the planning stage for Phase 2 and efforts are progressing for Phase 1 development. The focus of our IV&V activities for this report included the completion of a two-month evaluation of security. Additional focus areas were not completed due to limited access to documents, meetings, communications, and the system.

The IV&V Dashboard on the following two pages provides a quick visual and narrative snapshot of both the project status and project assessment as of July 29, 2020. Additional explanation is included in Findings and Recommendations by Assessment Area for new findings and in Appendix D: Prior Findings Log for prior report findings. Refer to Appendix A: IV&V Criticality and Severity Ratings for an explanation of the ratings.

LESSONS LEARNED

“Learning without reflection is a waste. Reflection without learning is dangerous.”

- Confucius

-Confucius
**PROJECT ASSESSMENT**

**SUMMARY RATINGS**

**OVERALL RATING**

**NA**

Incomplete information available for conclusive observation and assessment.

**PROGRAM GOVERNANCE**

**G**

**PROJECT MANAGEMENT**

**R**

**TECHNOLOGY**

**Y**

**CRITICALITY RATINGS**

**R** **Y** **G** **NA**

---

**26 OPEN FINDINGS**

**SEVERITY RATINGS BY ASSESSMENT AREA**

- **PROGRAM GOVERNANCE**:
  - High: 1
  - Medium: 10
  - Low: 5
  - Preliminary: 1
  - Positive: 10

- **PROJECT MANAGEMENT**:
  - High: 1
  - Medium: 5
  - Low: 4

- **TECHNOLOGY**:
  - High: 1
  - Medium: 5

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**PROJECT BUDGET**

- **$3.4 M**
  - Invoiced: $3.4 M
  - Total: $3.4 M

*Only includes contracts. IV&V unable to validate total budget.*

---

**PROJECT PROGRESS**

**As of 7/15/20. IV&V unable to verify %.*

---

**47 OPEN RECOMMENDATIONS**

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**AS OF JULY 29, 2020**

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**PHASE 1**

- **AUG 2018**
  - Plan
  - Design
  - Build

- **MAY 2019**
  - Test

- **FEB 2020**
  - Deploy

**REVISED**

- 6 MONTHS BEHIND

---

**PHASE 2**

- **JUNE 2020**
  - Plan
  - Design

- **FEB 2021**
  - Build

- **OCT 2021**
  - Test

- **JUN 2022**
  - Deploy

**REVISED**

- Based on high-level timeline. Detailed schedule pending.

---

**ORIGINAL**

**ACTUAL**

**REVISED**

**DELAYED**

---

*** Revised go-live tentatively approved by DLIR.

**** Based on high-level timeline. Detailed schedule pending.
<table>
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<tr>
<th>MAY</th>
<th>JUN</th>
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<th>IV&amp;V ASSESSMENT AREA</th>
<th>IV&amp;V OBSERVATIONS</th>
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<td>Overall</td>
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<td>A gray criticality rating is assigned for the eCMS Project as IV&amp;V does not have adequate visibility into project activities or access to information for conclusive observation and assessment. There may be other risks and issues that we have not identified that could impact the overall rating and assessment of the project’s current status. The criticality ratings for the underlying IV&amp;V Assessment Areas and IV&amp;V Assessment Categories were generally carried forward from the prior month unless we were aware of any significant changes. DataHouse and DLIR are progressing with Phase 2 efforts, however, the path forward is still unclear and the project is already experiencing some slight delays. Proper planning and a detailed schedule for at least the next rolling two months are critical to minimizing further delays as the COVID-19 pandemic continues to significantly limit the availability of DCD, DLIR Electronic Data Processing Systems Offices (EDPSO), and the Office of Enterprise Technology Services (ETS) resources. Understandably the project pace slowed over the last few months as the project team was forced to make adjustments due to the pandemic, however, the eCMS Project is increasingly at risk unless DLIR and DataHouse work together to rebuild momentum, increase efficiency, and improve project performance within the project budget and resource constraints.</td>
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<td>Program Governance</td>
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<td>The eCMS Project Executive Steering Committee (ESC) convened for the monthly meeting. ESC guidance and oversight are critical for providing workable options with the limited budget and resources and helping the project to get back on track.</td>
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<td>Project Management</td>
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<td>A few of the DLIR project resources, including the DLIR Project Manager, returned to the project on a limited basis and additional DLIR project resources are expected to have some availability in the upcoming months as DCD employees are slowly transitioned back from the Unemployment Insurance (UI) Division. Without a full-time DLIR Project Manager, many project management activities are still not consistently or effectively performed. Additionally, there has not been significant progress to address prior IV&amp;V findings (refer to Appendix D: Prior Findings Log) related to a number of foundational project management processes with the most critical areas including cost, schedule, resource, requirements, change, and risk management. With the start of the planning stage of Phase 2, this is a great opportunity to review identified deficiencies, evaluate the effectiveness of current project processes, and reflect on lessons learned on the project to-date. IV&amp;V does not have adequate visibility of DataHouse’s on-going planning activities or understanding of deliverables and approach for Phase 2.</td>
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<td>Technology</td>
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<td>DataHouse performed remediation of the Amazon Web Services (AWS) vulnerability scan findings and DLIR reviewed and approved the results. Additionally, DataHouse and DLIR agreed on a process for continuing performance and review of vulnerability scans. DataHouse continues to develop and test Phase 1 Content Management and Case Management solutions, however, IV&amp;V does not have adequate visibility of development, test, or related integration and data conversion activities. IV&amp;V also does not have visibility of the on-going DLIR Subject Matter Experts (SMEs) review of the Case Management Epic 2 and 3 builds that was expected to be completed in July.</td>
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Findings and Recommendations by Assessment Area

The overall rating is typically assigned based on the criticality ratings of the IV&V Assessment Categories and the severity ratings of the underlying findings (see Appendix A: IV&V Criticality and Severity Ratings), however, the overall rating for this month is gray due to incomplete information for conclusive observation and assessment. The tables below summarize the criticality ratings for each IV&V Assessment Category in the three major IV&V Assessment Areas. The criticality ratings for the IV&V Assessment Categories were generally carried forward from the prior month unless we were aware of any significant changes. Due to inadequate visibility into project activities and limited access to project communications, documents, and system, there may be other risks and issues that we have not identified that could impact the rating and assessment of the project.

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<td>Y</td>
<td>Benefits Realization</td>
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<td>System Software, Hardware, and Integrations</td>
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<td>G</td>
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<td>Design</td>
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<td>R</td>
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<td>Scope and Requirements Management</td>
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<td>R</td>
<td>Cost, Schedule, and Resource Management</td>
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<td>Risk Management</td>
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<td>R</td>
<td>Communications Management</td>
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<td>Organizational Change Management (OCM)</td>
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<td>Business Process Reengineering (BPR)</td>
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<td>Training and Knowledge Transfer</td>
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### PROGRAM GOVERNANCE

#### Governance Effectiveness

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<td>Governance Effectiveness</td>
<td>The eCMS Project Executive Steering Committee (ESC) discussed AWS remediation and other project updates. The resource that ETS provided to supplement DLIR EDPSO’s limited availability helped to timely complete critical security tasks. Providing resource options such as this are extremely valuable to the project. Continued ESC guidance and oversight are critical for providing workable options with the limited budget and resources and helping the project to get back on track.</td>
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#### Benefits Realization

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<td></td>
<td>Benefits Realization</td>
<td>No significant updates since the prior report. DLIR still needs to begin collecting and monitoring success metrics data (2019.07.PG05).</td>
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<td>Y</td>
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## Findings and Recommendations

### MAY JUN JUL IV&V ASSESSMENT CATEGORY

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<td>Project Organization and Management</td>
<td>DataHouse and DLIR are progressing with Phase 2 efforts, however, the path forward is still unclear (2020.03.PM01) and the project is already experiencing a few delays and setbacks. IV&amp;V does not have adequate visibility of DataHouse’s on-going planning activities or understanding of deliverables and approach for Phase 2.</td>
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<tr>
<td></td>
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<td></td>
<td>Scope and Requirements Management</td>
<td>The DLIR Project Manager returned on a limited basis to the project, however, without a full-time project manager, many project management activities are still not consistently or effectively performed. DLIR is also behind on review of pending project deliverables (2019.07.PM03).</td>
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<tr>
<td></td>
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<td></td>
<td>Cost, Schedule, and Resource Management</td>
<td>Additionally, there has not been significant progress to address prior IV&amp;V findings (refer to Appendix D: Prior Findings Log) related to a number of foundational project management processes. With the start of the planning stage of Phase 2, this is a great opportunity to review identified deficiencies, evaluate the effectiveness of current project processes, and reflect on lessons learned on the project to-date (2020.07.PM01).</td>
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<tr>
<td></td>
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<td></td>
<td>Risk Management</td>
<td>Improvements to the change management process are still needed (2019.09.PM01) to better analyze changes for potential schedule and cost impacts and obtain timely approvals. Improvements in project organization and collaboration between DLIR and DataHouse (2019.07.PM02) are not possible at this time due to limited availability of DLIR project resources and should be reassessed as resources return to the project.</td>
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### FINDINGS

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<td>1</td>
<td>5</td>
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</tbody>
</table>
### Findings and Recommendations

#### Scope and Requirements Management

Documentation of requirements is still incomplete (2019.07.PM10) and traceability needs improvement (2019.10.PM01). DataHouse refines user stories and requirements through sprint sessions and project communications, however, IV&V did not observe or have access to information to verify any progress made in the current month. DLIR’s review of their third-party vendor’s requirements assessment results is still pending. Requirements gathering for Phase 2 is scheduled to kick-off in August. The requirements processes, roles, and responsibilities should be reevaluated and improved to increase efficiency and avoid the setbacks and delays experienced in Phase 1.

#### Cost, Schedule, and Resource Management

DCD, DLIR EDPSO, and ETS project resources are still significantly limited (2020.03.PM01) though some are expected to have availability in upcoming months. DLIR should keep exploring options to obtain necessary project resources (2019.07.PM14) and optimize utilization of assigned resources (2019.09.PM02). DataHouse’s revisions to the project schedule for Phase 1 tasks were tentatively approved by DLIR, however, Phase 2 tasks, dates, and required hours and resources for at least the next rolling two months were not provided. With limited availability, State resources need a clear understanding of upcoming project activities and sufficient lead time to adequately prepare for and complete project tasks. Understandably, there are many unknowns in the long-term project schedule, however, improvements to schedule management processes (2019.07.PM13) are critical to minimizing further delays. Improvements are also needed for cost management (2019.07.PM12) to better track and monitor costs. DataHouse’s contract payment schedules are not revised for changes in completion of milestones and deliverables resulting in prepayment of contract funds.
## Findings and Recommendations

### MAY JUN JUL IV&V ASSESSMENT

<table>
<thead>
<tr>
<th>Category</th>
<th>IV&amp;V ASSESSMENT</th>
<th>IV&amp;V OBSERVATION</th>
<th>FINDINGS</th>
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</thead>
<tbody>
<tr>
<td>Risk Management</td>
<td>R</td>
<td>No significant updates since the prior report. DataHouse and DLIR independently log risks and issues. DataHouse and DLIR need to work together to consistently discuss and manage risks and improve the risk management process (2019.07.PM09). Additional focus on timely developing and executing mitigation plans for critical risks and issues will help to reduce individual threats and overall project risk exposure.</td>
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<tr>
<td>Communications Management</td>
<td>G</td>
<td>Monthly ESC meeting and weekly project status meetings between DataHouse and DLIR continued. DLIR made some updates to the project website. Improvements are needed to increase the effectiveness and timeliness of project team (2019.07.PM06) and stakeholder (2019.07.PM07) communications.</td>
<td>0 2 0</td>
</tr>
<tr>
<td>Organizational Change Management (OCM)</td>
<td>R</td>
<td>No significant updates since the prior report. A structured OCM approach is still needed (2019.07.PM08) to ensure stakeholders accept and embrace changes.</td>
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</tr>
<tr>
<td>Business Process Reengineering (BPR)</td>
<td>G</td>
<td>DataHouse facilitates BPR improvements through Case Management development sprints, however, IV&amp;V does not have regular visibility of BPR for Content Management and integrations. As Phase 2 requirements gathering begins, the BPR processes, roles, and responsibilities should be reevaluated to ensure process improvement success metrics are understood and achieved.</td>
<td>0 0 0</td>
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<tr>
<td>Training and Knowledge Transfer</td>
<td>NA</td>
<td>The Content Management training is on hold due to unavailability of DLIR project resources (2020.03.PM01). IV&amp;V does not have adequate understanding of the planned training and knowledge transfer strategy and approach or access to on-going training planning activities.</td>
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</table>
Finding #: 2020.07.PM01

**STATUS:** OPEN

**TYPE:** RISK

**SEVERITY:** 2

**TITLE:** LIMITED PROGRESS TO ADDRESS PREVIOUSLY IDENTIFIED DEFICIENCIES

---

**Finding:** Limited progress to address previously identified deficiencies for foundational project processes may result in reoccurring issues and delays.

Industry Standards and Best Practices: PMI PMBOK Chapter 4.4 explains that the lesson learned register can include challenges, problems, impact, recommendations, actions taken to correct situations, and any necessary follow-up.

**Analysis:** IV&V identified a number of risks and issues since the IV&V Initial Report in July 2019 related to foundational project processes. Some of the more critical areas requiring improvements include cost management, schedule management, resource management, requirements management, change management, risk management, and testing as these processes impact many aspects of the project execution and contribute greatly to overall project performance and project success. Identified deficiencies contributed to project delays experienced in Phase 1. For example, a significant amount of time was spent clarifying and refining Case Management user stories due to incomplete and unclear requirements documentation. Additionally, the project was delayed several times for AWS due to unclear requirements, tasks, and resources needed as well as ineffective processes to document and analyze the change and identify and mitigate risks associated to the AWS build.

Incremental progress was made for many findings but a majority are still open. Progress was limited by availability of project resources and competing organizational and project priorities. With the kick-off of Phase 2 in August, this is a great opportunity to review identified deficiencies, evaluate the effectiveness of current project processes, reflect on lessons learned on the project to-date, and make necessary improvements for upcoming activities. Additionally, addressing deficiencies will better position the project to handle and adjust to changes going forward including potential rapidly evolving circumstances related to the COVID-19 pandemic (refer to finding 2020.03.PM01).

**Recommendations:**

**2020.07.PM01.R1 – Perform a project assessment.**

- Consider performing retrospective for project processes.
- Consider conducting performance assessments for the project team, individual team members, and governance.
- Document lessons learned and necessary actions or follow-up to prevent reoccurrence of similar issues.

**2020.07.PM01.R2 – Formulate a plan for addressing identified deficiencies.**

- Prioritize based on relevance to upcoming activities; consider focusing on requirements management and BPR processes to optimize effectiveness and efficiencies of upcoming requirements gathering sessions.
- Develop high-level timeline and tasks for addressing deficiencies and begin tracking progress.
### TECHNOLOGY

#### System Software, Hardware, and Integrations

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<th>MAY</th>
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<th>IV&amp;V ASSESSMENT CATEGORY</th>
<th>IV&amp;V OBSERVATION</th>
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</table>
|     | Y   | Y   | System Software, Hardware, and Integrations | - DataHouse continues to develop Phase 1 Content Management and Case Management solutions. Unavailability of key DLIR project resources (2020.03.PM01) is still impacting the DataHouse’s ability to schedule and complete Phase 1 development activities.  
- DataHouse is also kicking off Phase 2 efforts but encountered some challenges in gaining access to legacy system data due to unidentified State resource and cost impacts related to the proposed Phase 2 plan (2020.03.PM01).  
- IV&V does not have adequate visibility of development and integration activities or access to current builds to be able to better assess and identify potential risks and issues.  
- The interface solution (2019.07.IT02) remains unclear and M&O roles and responsibilities (2019.09.IT02) need further clarification. | 0 2 0    |

#### Design

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<tr>
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<td>Design</td>
<td>- No significant updates since the prior report. DataHouse refines the Content Management and Case Management design during development and periodically updates design documents. IV&amp;V does not have adequate visibility of development activities or access to current builds to assess changes and updates to design. Security design is covered in the Security IV&amp;V Assessment Category.</td>
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<tr>
<td>TECHNOLOGY</td>
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<td><strong>Data Conversion</strong></td>
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<td>Content Management data conversion activities were awaiting recently completed remediation of AWS environments. Case Management data conversion activities are on hold for Epic 4. IV&amp;V does not have adequate visibility of data conversion activities to assess the progress or approach for data conversion. Additionally, DLIR and DataHouse’s data conversion plans and processes need to be developed or further clarified (2019.11.IT01) and an unsupported legacy system may impact data conversion (2019.09.IT03).</td>
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<td><strong>Quality Management and Testing</strong></td>
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<td>As a part of the Scrum methodology, user review and feedback are a part of each sprint and epic. After some initial delays, DLIR rescheduled SMEs to perform lite user acceptance testing (UAT) review on the Epic 2 and 3 builds in July. IV&amp;V does not have visibility of the on-going DLIR SME review to report the progress or assess the effectiveness of this testing. DataHouse is currently performing various system and integration testing, however, IV&amp;V also does not have adequate visibility into DataHouse testing activities or test documentation to provide an assessment. DLIR’s test plan is still pending (2019.10.IT01). DLIR’s review of DataHouse’s test plan is still pending and additional clarification of DataHouse’s test plan is still needed (2020.02.IT01). The DataHouse and DLIR quality management plans and approach have also not yet been finalized (2019.07.IT05).</td>
<td>0 3 0</td>
<td></td>
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<tr>
<td></td>
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<td><strong>Configuration Management</strong></td>
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<td></td>
<td></td>
<td>No significant updates since the prior report. DataHouse has drafts of the configuration management approaches for the Content Management and Case Management development teams, however, a comprehensive configuration management plan including the DLIR approval process is still pending (2019.07.IT06).</td>
<td>0 1 0</td>
<td></td>
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</tr>
</tbody>
</table>
### Security

DataHouse performed remediation of AWS vulnerability scan findings and DLIR, with the assistance of ETS, reviewed and approved the results. Additionally, DataHouse and DLIR agreed on a process for continuing the performance and review of periodic AWS vulnerability scans. DLIR’s security management plan (2019.07.IT07) and security policies (2019.10.IT02) are pending and the expected timeline for completion is still unknown. DLIR previously planned to develop high-level timeline and tasks in July but is now targeting August.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>MAY</th>
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**FINDINGS**

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FINDING #: 2019.09.IT02  STATUS: OPEN  TYPE: RISK  SEVERITY: 2

TITLE: UNCLEAR M&O ROLES AND RESPONSIBILITIES

Finding: Unclear M&O roles and responsibilities may impact operational readiness after transition.


Analysis: This was originally reported in the September 2019 IV&V Monthly Report as a preliminary concern but is upgraded to a risk in this report. The M&O roles and responsibilities and plans for developing support processes and procedures are currently unclear. DLIR is considering executing a support option in their contract with DataHouse to help with M&O after go-live as it is uncertain if DLIR EDPSO will have adequate resources to perform required M&O. The COVID-19 pandemic (refer to finding 2020.03.PM01) further exacerbates and creates additional uncertainty with regards to DLIR EDPSO and ETS resources. The roles and responsibilities within the DLIR EDPSO team and any shared responsibilities with ETS and DataHouse need to be clarified. This will help to quantify eCMS M&O resource requirements (refer to finding 2019.09.PM02) and either identify resources within the existing DLIR EDPSO team or acquire the necessary resources (2019.07.PM14). This should be done with sufficient time for training and knowledge transfer so that M&O resources are in place at go-live. Clarifying M&O roles and responsibilities will also help to develop the related security management plan (refer to finding 2019.07.IT07).

• Discuss terms of DataHouse support option to understand level of support, cost structure, and timing of transition.
• Clarify any shared responsibility with ETS and enterprise tools that can be leveraged.
FINDING #: 2019.09.IT03  STATUS: OPEN  TYPE: RISK  SEVERITY: 3

TITLE: UNSUPPORTED IBM LOTUS NOTES

Finding: Unsupported IBM Lotus Notes Domino Case Management may impact the execution of data conversion activities and data quality.

Industry Standards and Best Practices: N/A

Analysis: This was originally reported in the September 2019 IV&V Monthly Report as a preliminary concern but is upgraded to a risk in this report. The current case management system, IBM Lotus Notes Domino, is no longer supported. The product was sold by IBM to HCL Technologies, an Indian IT company. DLIR's licenses for the product ended in June 2019 and DLIR is unable to renew the licenses as HCL Technologies is not a State Procurement Office (SPO) compliant vendor. This system will be replaced by the eCMS Case Management solution which was scheduled to go-live in November 2020 but this was tentatively pushed back to June 2021. Any major issues with the current system may impact the data conversion process leading up to the go-live date, data quality, and potentially the overall system development.

Recommendations: 2019.09.IT03.R1 - Explore options for obtaining support.
   • Consider working with ETS or other State agencies still using Lotus Notes to get vendor approved and support contract in place.
Appendix A: IV&V Criticality and Severity Ratings

IV&V CRITICALITY AND SEVERITY RATINGS

Criticality and severity ratings provide insight on where significant deficiencies are observed and immediate remediation or risk mitigation is required. Criticality ratings are assigned to the overall project as well as each IV&V Assessment Area and IV&V Assessment Category. Severity ratings are assigned to each risk or issue identified.

Criticality Rating

The criticality ratings are assessed based on consideration of the severity ratings of each related risk and issue within the respective IV&V Assessment Area and IV&V Assessment category, 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. Arrows indicate trends in the project assessment from the prior report. Up arrows indicate improvements or progress made, down arrows indicate a decline or inadequate progress made in areas of increasing risk or approaching timeline, and no arrow indicates there was neither improving nor declining progress from the prior report.

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

**TERMS**

**RISK**
An event that has not happened yet.

**ISSUE**
An event that is already occurring or has already happened.
Severity Rating

Once risks are identified and characterized, 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. 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).

Findings that are positive or preliminary concerns are not assigned a severity rating.

**TERMS**

**POSITIVE**
Celebrates high performance or project successes.

**PRELIMINARY CONCERN**
Potential risk requiring further analysis.

**SEVERITY 1:** High/Critical level

**SEVERITY 2:** Moderate level

**SEVERITY 3:** Low level
## Appendix B: Industry Standards and Best Practices

<table>
<thead>
<tr>
<th>STANDARD</th>
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</tr>
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<tbody>
<tr>
<td>ADA</td>
<td>Americans with Disabilities Act</td>
</tr>
<tr>
<td>ADKAR®</td>
<td>Prosci ADKAR: Awareness, Desire, Knowledge, Ability, and Reinforcement</td>
</tr>
<tr>
<td>BABOK® v3</td>
<td>Business Analyst Body of Knowledge</td>
</tr>
<tr>
<td>DAMA-DMBOK® v2</td>
<td>DAMA International’s Guide to the Data Management Body of Knowledge</td>
</tr>
<tr>
<td>HIPAA</td>
<td>Health Insurance Portability and Accountability Act of 1996</td>
</tr>
<tr>
<td>MARS-E v2.0</td>
<td>CMS Minimum Acceptable Risk Standards for Exchanges – Exchange Reference Architecture Supplement</td>
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<tr>
<td>MITA v3.0</td>
<td>Medicaid Information Technology Architecture</td>
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<tr>
<td>PMBOK® v6</td>
<td>Project Management Institute (PMI) Project Management Body of Knowledge</td>
</tr>
<tr>
<td>SWEBOK v3</td>
<td>Guide to the Software Engineering Body of Knowledge</td>
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<tr>
<td>TOGAF® v9.2</td>
<td>The Open Group Architecture Framework Standard</td>
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<td>COBIT® 2019 Framework</td>
<td>Control Objectives for Information and Related Technologies Framework</td>
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<td>Institute of Electrical and Electronics Engineers (IEEE) Standard for Configuration Management in Systems and Software Engineering</td>
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<td>IEEE 1062-2015</td>
<td>IEEE Recommended Practice for Software Acquisition</td>
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<td>IEEE 1012-2016</td>
<td>IEEE Standard for System, Software, and Hardware Verification and Validation</td>
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<td>Security Assertion Markup Language v2.0</td>
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<td>SoaML v1.0.1</td>
<td>Service Oriented Architecture Modeling Language</td>
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<td>Capability Maturity Model Integration for Development</td>
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<td>FIPS 200</td>
<td>FIPS Publication 200, Minimum Security Requirements for Federal Information and Information Systems</td>
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<td>NIST 800-53 Rev 4</td>
<td>National Institute of Standards and Technology (NIST) Security and Privacy Controls for Federal Information Systems and Organizations</td>
</tr>
<tr>
<td>NIST Cybersecurity Framework v1.1</td>
<td>NIST Framework for Improving Critical Infrastructure Cybersecurity</td>
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<tr>
<td>LSS</td>
<td>Lean Six Sigma</td>
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Appendix C: Interviews, Meetings, and Documents

**INTERVIEWS**

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<tr>
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**MEETINGS**

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<tr>
<td>06/30/20</td>
<td>DataHouse Status Meeting</td>
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<tr>
<td>07/08/20</td>
<td>IV&amp;V Update and Planning Meeting</td>
</tr>
<tr>
<td>07/08/20</td>
<td>ETS Meeting</td>
</tr>
<tr>
<td>07/10/20</td>
<td>Monthly eCMS Steering Committee Meeting</td>
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<tr>
<td>07/13/20</td>
<td>Security Working Session</td>
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<tr>
<td>07/16/20</td>
<td>Security Working Session</td>
</tr>
<tr>
<td>07/20/20</td>
<td>IV&amp;V DCD Update Meeting</td>
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<tr>
<td>07/20/20</td>
<td>DCIS Database Replication Meeting</td>
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<tr>
<td>07/21/20</td>
<td>IV&amp;V DCD Update Meeting</td>
</tr>
<tr>
<td>07/21/20</td>
<td>Security Working Session</td>
</tr>
<tr>
<td>07/22/20</td>
<td>IV&amp;V Update and Planning Meeting</td>
</tr>
<tr>
<td>07/24/20</td>
<td>Security Briefing Meeting</td>
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<tr>
<td>07/24/20</td>
<td>IV&amp;V Update and Planning Meeting</td>
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<td>07/28/20</td>
<td>Weekly PM Status Meeting</td>
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<td>Request for Proposal</td>
<td>State of Hawaii DLIR DCD RFP No. RFP-17-002-DCD (Release Date 04/12/18)</td>
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<td>DataHouse Proposal</td>
<td>DataHouse ECMS Best and Final Offer (BAFO) Proposal (Dated 06/20/18)</td>
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<tr>
<td>Request for Proposal</td>
<td>State of Hawaii DLIR DCD IV&amp;V RFP No. RFP-18-001-DCD (Release Date 12/28/18)</td>
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<td>Contract</td>
<td>Contract between State of Hawaii and DataHouse Consulting Inc. (Effective 08/27/18)</td>
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<td>Project Management</td>
<td>DataHouse Project Management Plan 1.3 (Updated 08/30/19)</td>
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<td>DataHouse Project Status Report (Status Date 06/21/20 for reporting period 05/01 – 05/15/20, finalized 06/29/20)</td>
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<tr>
<td>Project Management</td>
<td>DataHouse Project Status Report (Status Date 06/21/20 for reporting period 05/16 – 05/31/20, finalized 06/29/20)</td>
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<td>Project Management</td>
<td>Change Request (CR004) Automate Open Close Appeal (Revised 06/22/20)</td>
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<td>Project Management</td>
<td>Change Request (CR004) Attachment - Events Spreadsheet (Excel)</td>
</tr>
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<td>Risk and Issues</td>
<td>Risk Action Issue Decision (RAID) Log (Updated 07/24/20 by DataHouse Project Manager)</td>
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<td>Schedule</td>
<td>eCMS Microsoft Project Plan as of 07/15/20 (MPP file)</td>
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<td>Schedule</td>
<td>Project Plan Revised Content Management Dates (07/14/20)</td>
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<td>DataHouse Email re: DCIS Replication of DCIS Database Meeting (07/15/20)</td>
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<td>DataHouse Recording of DCIS Replication of DCIS Database Meeting (07/15/20)</td>
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<td>Insurance Carriers FAQ (07/14/20)</td>
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<td>AWS Instance Information as of 05/31/20</td>
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<td>DataHouse Email re: Status of Remediation of AWS UAT Environment (07/17/20)</td>
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<td>AWS Inspector Vulnerability Scan on UAT as of 07/16/20 (PDF and Excel file)</td>
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<td>APARS IBM-WebSphere CVEs List</td>
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### DOCUMENTS (CONTINUED)

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<td>M&amp;O</td>
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<td>Governance</td>
<td>eCMS ESC Meeting Agenda (07/10/20)</td>
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Appendix D: Prior Findings Log
### Appendix D: Prior Findings Log

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<thead>
<tr>
<th>Date</th>
<th>Project Organization and Management</th>
<th>Description</th>
<th>Recommendation</th>
<th>IV&amp;V Recommendations</th>
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<tr>
<td>04/24/20</td>
<td>Open 04/24/20</td>
<td>Some preliminary discussions were held and limited progress was made to formulate contingency and mitigation plans and to adjust the project schedule and budget for COVID-19 impacts. 2020.03.PM01.R1 plans to focus on the project and budgeting for COVID-19.</td>
<td>Consider providing project status updates to keep the project moving forward and ensuring that available resources are utilized.</td>
<td>2020.03.PM01.R1</td>
</tr>
<tr>
<td>05/22/20</td>
<td>05/22/20: DataHouse and DLIR discussed and tentatively agreed on a plan to move Phase 2 project work up to keep the eCMS Project moving forward. DataHouse and DLIR in the process of formulating this proposed plan in a change request for IV&amp;V approval. DataHouse is for a couple weeks left at Phase 1. Both can be done without key DLIR project resources. The change changed the order in which the tasks will be completed. The phase 2 work was completed with limited DLIR SME participation and limited available resources. 2020.03.PM01.R2 plans to respond to COVID-19 impacts and start the project.</td>
<td>2020.03.PM01.R2 plans to initiate a plan to respond to COVID-19 impacts for the project.</td>
<td>2020.03.PM01.R2</td>
<td></td>
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<tr>
<td>06/26/20</td>
<td>06/26/20: Accuity decreased the severity rating from Level 1 (High) to Level 2 (Moderate) as DLIR presented the high-level plan and timeline to move Phase 2 project work up at the ESC meeting on 6/2/2020. Additionally, a former change request was also updated which included a re-scheduling of the project timeline. 2020.03.PM01.R2 plans to respond to COVID-19 impacts and start the project.</td>
<td>2020.03.PM01.R2 plans to initiate a plan to respond to COVID-19 impacts for the project.</td>
<td>2020.03.PM01.R2</td>
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<tr>
<td>07/29/20</td>
<td>07/29/20: COVID-19 continues to impact the availability of DLIR project resources. A few of the DLIR project resources, including the DLIR Project Manager, returned to the project on a limited basis and additional DLIR project resources are expected to have some involvement in the project. While the number of DLIR resources is limited, some level of DLIR project resources will always be needed. Making improvements for identified deficiencies (2020.07.PM01) in a few key foundational project processes including schedule management (2019.09.PM01), change management (2019.07.PM01), and risk management (2019.07.PM01) will better position the project to handle and adjust to changes going forward.</td>
<td>2020.03.PM01.R2 plans to initiate a plan to respond to COVID-19 impacts for the project.</td>
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#### Project Organization and Management

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<td>2020.03.PM01.R1</td>
<td>Consider providing project status updates to keep the project moving forward and ensuring that available resources are utilized.</td>
<td>2020.03.PM01.R1 plans to initiate a plan to respond to COVID-19 impacts for the project.</td>
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<tr>
<td>2020.03.PM01.R2</td>
<td>2020.03.PM01.R2 plans to initiate a plan to respond to COVID-19 impacts for the project.</td>
<td>2020.03.PM01.R2 plans to initiate a plan to respond to COVID-19 impacts for the project.</td>
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### Detailed Analysis

The COVID-19 pandemic has had a significant impact on the project's execution, although the extent of the impact has not been fully assessed yet. DLIR SMEs have identified that the project's success is dependent on continued support from DataHouse and the various state agencies that are currently involved.

#### ASSESSMENT

<table>
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<th>CATEGORY</th>
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<tr>
<td>Origin</td>
<td>DataHouse and DLIR</td>
<td>2020.03.PM01.R1</td>
<td>The COVID-19 pandemic has had a significant impact on the project's execution, although the extent of the impact has not been fully assessed yet. DLIR SMEs have identified that the project's success is dependent on continued support from DataHouse and the various state agencies that are currently involved.</td>
</tr>
</tbody>
</table>

The following is a summary of the related events and facts:

- All eCMS Project meetings were cancelled beginning March 17, 2020 following directives for non-essential state workers to stay home. Subsequent alternative dates and times were set but the effort is currently under through March 30, 2020.
- The COVID-19 Project resources, including the DLIR Transformation Sponsor and DLIR Project Manager, are still providing to the state and ensuring that milestones are being adhered to despite the challenges posed by the pandemic.
- DLIR has continued to work with the current and upcoming schedules to keep the project moving forward.
- Key DLIR Subject Matter Experts (SMEs) have been currently unavailable to the 406-Program. The 406-SMEs are critical for the Care Management System development process due to the valuable knowledge and input of operations they provide to the development team. DLIR has continued to work with the current and upcoming schedules to keep the project moving forward.
- Two key DLIR SMEs who have been temporarily assigned to assist the DLIR Department have not been able to return to work due to COVID-19 restrictions.
- While some state workers are on leave, the remaining 406-Program operational work will still DLIR’s capability to participate in our parent project effort.
- The Office of Statewide Technology Services (OSTS) and DLIR Resources and Data Processing Systems Office (DPSO) has been able to assist on an as-needed basis and to maintain a current project status.
- The project is currently experiencing resource, data, and cloud constraints. Resources that are available are put on hold due to COVID-19.
- Although the DataHouse resources were managed to avoid the impact of virus and more impact of DLIR system support, DataHouse's production is more focused on development work. However, DataHouse's leadership is actively engaged in developing DLIR's completion of assigned tasks.

The overall situation in already constrained DLIR project resources has been severely impacted such that the state data that will impact project costs and schedule and potentially impact quality and project success. Identifying potential impacts to project costs and schedule and how the project has been affected and how to start mitigating project risks that could help to reduce the risk or limit the impact.

The project’s success in the coming months is contingent on the project’s focused perspective, with an understanding that high DLIR department-level priorities may limit the project’s ability to effectively and timely address project challenges. Although the project’s findings are important for the Project Organization and Management (OM) overall implementation, this finding also impacts the criticality ratings for the personnel effectiveness,่อ Cost, Schedule and Resource Management, Risk Management, Communications Management, Data Accuracy, Quality Management and Testing, and Security processes. In addition to the specific recommendations made in this finding, DLIR project resources should keep the project moving forward. While there is a few key foundational project processes including schedule management (2019.09.PM01), change management (2019.07.PM01), and risk management (2019.07.PM01) still better position the project to handle and adjust to changes going forward. DataHouse will continue to evaluate COVID-19 impacts and plans.
Data Consumers 2019.10.PM01.R1 Improve requirements traceability.  
- Trace contract requirements to requirements subsets used by the development teams to ensure completeness.  
- Consider identifying high-level requirements that duplicate more than one user story.  
- Ensure requirements are linked and tracked within the requirements management tool to ensure stakeholder satisfaction.  
- Consider use of a requirements management tool with greater functionality.

Data Conversion 2019.09.PM02.R1 Ensure data conversion plans are up-to-date  
- Review and update data conversion plans as progress is made.  
- Evaluate the impact on application and project performance of changes to data conversion plans.  
- Adjust data conversion test resource needs and ensure adequate measurements are recorded, tested, and stored, and updated based on findings.  
- Consider use of a requirements management tool with greater functionality.

Requirements Management 2019.07.PG05.R2 Consider requirements traceability  
- Consider identifying high-level requirements that duplicate more than one user story.  
- Ensure requirements are linked and tracked within the requirements management tool to ensure stakeholder satisfaction.  
- Consider use of a requirements management tool with greater functionality.

Data Consumers 2019.11.IT01.R1 Improve DLIR understanding of the data conversion process.  
- Explain how data conversion tools perform validation and reconciliation steps and share available reports and logs.  
- Consider removing extraneous or unnecessary data conversion test activities, tests, reports, and steps, and tuning.  
- Acquire a resource to help with their review of requirements documentation for completeness and traceability.  
- DLIR did not complete their review of the vendor's results due to COVID-19.

Data Conversion 2019.11.IT01.R1 Improve DLIR understanding of the data conversion process.  
- Explain how data conversion tools perform validation and reconciliation steps and share available reports and logs.  
- Consider removing extraneous or unnecessary data conversion test activities, tests, reports, and steps, and tuning.  
- Acquire a resource to help with their review of requirements documentation for completeness and traceability.  
- DLIR did not complete their review of the vendor's results due to COVID-19.

Data Consumers 2019.02.IT01.R1 Clarify the test approach.  
- Perform a deliverable review (refer to finding 2019.07.PM03) to ensure DLIR understands the test plan and scope.  
- Consider making improvements to the test documentation.  
- Consider a process for authorization of test data.

Data Consumers 2019.02.IT01.R2 Develop adequate test management processes and tools.  
- Consider a process for monitoring and reporting test status and results.  
- Consider a process for authorization of test data.

Assessment 2019.10.PM01.R1 Improve requirements traceability.  
- Trace contract requirements to requirements subsets used by the development teams to ensure completeness.  
- Consider identifying high-level requirements that duplicate more than one user story.  
- Ensure requirements are linked and tracked within the requirements management tool to ensure stakeholder satisfaction.  
- Consider use of a requirements management tool with greater functionality.

Assessment 2019.09.PM02.R1 Ensure data conversion plans are up-to-date  
- Review and update data conversion plans as progress is made.  
- Evaluate the impact on application and project performance of changes to data conversion plans.  
- Adjust data conversion test resource needs and ensure adequate measurements are recorded, tested, and stored, and updated based on findings.  
- Consider use of a requirements management tool with greater functionality.

Assessment 2019.07.PG05.R2 Consider requirements traceability  
- Consider identifying high-level requirements that duplicate more than one user story.  
- Ensure requirements are linked and tracked within the requirements management tool to ensure stakeholder satisfaction.  
- Consider use of a requirements management tool with greater functionality.
Risk Moderate High Lack of approved test plans may impact the execution and quality of test activities and documentation.

According to the Project Management Plan (version 1.3), the DataHouse test plan was scheduled for completion on September 10, 2019. Due to unforeseen issues, the project team is working to finalize the test plan, with the expected completion date revised to November 2019. Due to resource constraints, the need to use another OLTP test solution, the OLTP test plan expected completion date was revised to November 2019 and the plan may be combined with the DataHouse test plan.

The DataHouse test activities are scheduled to begin in November 2019. DLIR needs to understand DataHouse’s test strategy and test needs. DLIR also needs to establish their own test strategy as well as identify, train, and schedule OLTP test resources.

11/22/19: DataHouse and DLIR test plans were not finalized as planned. DataHouse is performing some testing activities, however, Accuity does not have insight into testing activities to provide an update or assessment of testing.

01/24/20: The DataHouse test plan is targeted for completion in February 2020. DLIR plans to procure additional resources to assist with the development of the OLTP test plan and support testing activities.

02/21/20: DataHouse drafted their test plan, pending DLIR review and approval. Refer to finding 2020.02.IT01. DLIR’s test plan is still pending.

03/27/20: DLIR’s plan to procure additional resources to assist with testing activities is on hold due to COVID-19. DLIR was able to begin drafting their test plan however, an estimated completion date is uncertain given limited resources.

04/24/20: DLIR’s plan to procure additional resources to assist with testing activities is still on hold. DLIR continues to make progress drafting the OLTP test plan but the plan can’t be completed with limited resources.

05/22/20: No updates to report.

06/26/20: DLIR plans to have SMEs perform the lite UAT review on the Epic 2 and 3 builds in July. Without the OLTP test plan, DLIR SMEs may not have a clear understanding of the review purpose and process to effectively perform the testing.

07/29/20: DLIR’s lite UAT review of Epic 2 and 3 builds is still ongoing. IV&V does not have adequate visibility of the DLIR SME review to report the progress or assess the effectiveness of the testing. Accuity will evaluate DLIR test plans when finalized.

08/26/20: The EDPSO vendor drafted an access management policy and is targeting the end of February 2020 to complete drafts of other security policies. DLIR scheduled a meeting for the end of February to discuss AWS and implementing security controls to allow AWS to be ready for use.

09/22/20: DLIR scheduled a meeting to discuss AWS and implementing security controls to allow AWS to be ready for use.

Security 2019.10.IT01 High High Lack of formalized security policies and procedures may impact the security and privacy of the data and may lead to project delays.

Inadequately drafted security policies to determine security requirements for the eCMS Project and does not have security provisions for the secure transfer and storage of data. Delineate roles and responsibilities between the DataHouse and DLIR (refer to finding 2019.07.PM02). Estimate test resource needs and ensure adequate resources are identified, trained, and scheduled (refer to finding 2019.09.PM14 and 2019.07.PM14).

11/22/19: DataHouse and DLIR test plans were not finalized as planned. DataHouse is performing some testing activities, however, Accuity does not have insight into testing activities to provide an update or assessment of testing.

12/20/19: The Case Management development team went through the tool that will be used and the steps to perform and document performance UAT for each case type at the end of each development epic. The DataHouse and DLIR test plans are still pending.

12/20/19: The DataHouse test plan is targeted for completion in February 2020. DLIR plans to procure additional resources to assist with the development of the OLTP test plan and support testing activities.

1/21/20: DataHouse drafted their test plan, pending DLIR review and approval. Refer to finding 2020.02.IT01. DLIR’s test plan is still pending.

2/21/20: DLIR’s plan to procure additional resources to assist with testing activities is on hold due to COVID-19. DLIR was able to begin drafting their test plan however, an estimated completion date is uncertain given limited resources.

3/27/20: DLIR’s plan to procure additional resources to assist with testing activities is still on hold. DLIR continues to make progress drafting the OLTP test plan but the plan can’t be completed with limited resources.

4/24/20, 5/22/20, 6/26/20, and 7/29/20: The review of the draft security policies is still on hold due to unavailability of DLIR project resources.

5/22/20: No updates to report.

6/26/20: DLIR plans to have SMEs perform the lite UAT review on the Epic 2 and 3 builds in July. Without the OLTP test plan, DLIR SMEs may not have a clear understanding of the review purpose and process to effectively perform the testing.

7/29/20: DLIR’s lite UAT review of Epic 2 and 3 builds is still ongoing. IV&V does not have adequate visibility of the DLIR SME review to report the progress or assess the effectiveness of the testing. Accuity will evaluate DLIR test plans when finalized.

Security 2019.10.IT02 High High Lack of formalized security policies and procedures may impact the security and privacy of the data and may lead to project delays.

2019.10.IT02.R1 Formalize security policies.

2019.10.IT02.R2 Formalize and implement security procedures.

2019.10.IT02.R3 Consider prioritizing security procedures that are necessary for the operation of the AWS environments.

Security 2019.10.IT02 High High Lack of formalized security policies and procedures may impact the security and privacy of the data and may lead to project delays.

2019.10.IT02.R1 Formalize security policies.

2019.10.IT02.R2 Formalize and implement security procedures.

2019.10.IT02.R3 Consider prioritizing security procedures that are necessary for the operation of the AWS environments.

May 2019: DLIR began working with EDPSO and ETS to identify security requirements for the eCMS Project and does not have security provisions for the secure transfer and storage of data.

June 2019: DLIR is working to finalize the security policies and procedures to determine security requirements for the eCMS Project and does not have security provisions for the secure transfer and storage of data. Delineate roles and responsibilities between the DataHouse and DLIR (refer to finding 2019.07.PM02). Estimate test resource needs and ensure adequate resources are identified, trained, and scheduled (refer to finding 2019.09.PM14 and 2019.07.PM14).

July 2019: DLIR is working to finalize the security policies and procedures to determine security requirements for the eCMS Project and does not have security provisions for the secure transfer and storage of data. Delineate roles and responsibilities between the DataHouse and DLIR (refer to finding 2019.07.PM02). Estimate test resource needs and ensure adequate resources are identified, trained, and scheduled (refer to finding 2019.09.PM14 and 2019.07.PM14).

September 2019: DLIR is working to finalize the security policies and procedures to determine security requirements for the eCMS Project and does not have security provisions for the secure transfer and storage of data. Delineate roles and responsibilities between the DataHouse and DLIR (refer to finding 2019.07.PM02). Estimate test resource needs and ensure adequate resources are identified, trained, and scheduled (refer to finding 2019.09.PM14 and 2019.07.PM14).

October 2019: DLIR is working to finalize the security policies and procedures to determine security requirements for the eCMS Project and does not have security provisions for the secure transfer and storage of data. Delineate roles and responsibilities between the DataHouse and DLIR (refer to finding 2019.07.PM02). Estimate test resource needs and ensure adequate resources are identified, trained, and scheduled (refer to finding 2019.09.PM14 and 2019.07.PM14).

November 2019: DLIR is working to finalize the security policies and procedures to determine security requirements for the eCMS Project and does not have security provisions for the secure transfer and storage of data. Delineate roles and responsibilities between the DataHouse and DLIR (refer to finding 2019.07.PM02). Estimate test resource needs and ensure adequate resources are identified, trained, and scheduled (refer to finding 2019.09.PM14 and 2019.07.PM14).

December 2019: DLIR is working to finalize the security policies and procedures to determine security requirements for the eCMS Project and does not have security provisions for the secure transfer and storage of data. Delineate roles and responsibilities between the DataHouse and DLIR (refer to finding 2019.07.PM02). Estimate test resource needs and ensure adequate resources are identified, trained, and scheduled (refer to finding 2019.09.PM14 and 2019.07.PM14).

January 2020: DLIR is working to finalize the security policies and procedures to determine security requirements for the eCMS Project and does not have security provisions for the secure transfer and storage of data. Delineate roles and responsibilities between the DataHouse and DLIR (refer to finding 2019.07.PM02). Estimate test resource needs and ensure adequate resources are identified, trained, and scheduled (refer to finding 2019.09.PM14 and 2019.07.PM14).

February 2020: DLIR is working to finalize the security policies and procedures to determine security requirements for the eCMS Project and does not have security provisions for the secure transfer and storage of data. Delineate roles and responsibilities between the DataHouse and DLIR (refer to finding 2019.07.PM02). Estimate test resource needs and ensure adequate resources are identified, trained, and scheduled (refer to finding 2019.09.PM14 and 2019.07.PM14).

March 2020: DLIR is working to finalize the security policies and procedures to determine security requirements for the eCMS Project and does not have security provisions for the secure transfer and storage of data. Delineate roles and responsibilities between the DataHouse and DLIR (refer to finding 2019.07.PM02). Estimate test resource needs and ensure adequate resources are identified, trained, and scheduled (refer to finding 2019.09.PM14 and 2019.07.PM14).
Project Organization and Management

The Project Management Plan (Version 1.3) documents the change management process that includes Change Requests, impact assessments and a Change Log. The change to AWS (refer to finding 2019.07.IT01 in Appendix D) and the revision of the Content Management solution (refer to finding 2019.07.PM05) were not formally documented as Change Requests and included in the Change Log. Additionally, the change management process does not include built-in mechanisms to ensure that impacted documents are updated for the change and changes are appropriately communicated to impacted stakeholders.

Supplemental Recommendations

1. Consider setting thresholds or criteria for changes that go through different approval processes.
2. Define the different approval processes (e.g., project manager, product owners, change control board, steering committee).
3. Implement additional columns in the Change Log to ensure updates are made to all impacted project plans, documents, or deliverables and changes are communicated to all impacted stakeholders.

Change Log

2019.09.PM01 Issue Moderate High The documented change management process was not followed as prescribed.

The Project Management Plan (version 1.3) documents the change management process that includes Change Requests, impact assessments and a Change Log. The change to AWS (refer to finding 2019.07.IT01 in Appendix D) and the revision of the Content Management solution (refer to finding 2019.07.PM05) were not formally documented as Change Requests and included in the Change Log. Additionally, the change management process does not include built-in mechanisms to ensure that impacted documents are updated for the change and changes are appropriately communicated to impacted stakeholders.

Accuity increased the severity rating from Level 2 (Moderate) to Level 1 (High) as the change requests identified in the September 2019 report are still outstanding and need to be finalized and agreed upon soon.

02/21/20: For updates to report.

Other critical change requests identified in previous months are still pending.

DataHouse is in the process of drafting the change request for the proposed plan to address COVID-19 impacts. The change request should include an impact assessment as outlined in the Project Management Plan. A thorough analysis should be performed to ensure the proposed plan is feasible and sustainable.

Accuity will review the change requests as they are finalized and evaluate improvements to the Change Log.
Cost, Schedule and Resources Management

2019.09.PM02 10/25/19 and 11/22/19: Accuity will continue to monitor this preliminary concern as the testing, data conversion, and sprint reviews with stakeholders activities are underway.

Cost, Schedule and Resource Management

12/20/19: This was changed to a risk in the December 2019 IV&V Monthly Report.

01/24/20: DLIR implemented a new tool to manage resource assignments and deadlines to better utilize and manage existing project resources. DLIR also plans to procure additional resources to support data conversion and testing activities.

02/21/20 and 03/27/20: No updates to report.

04/24/20: Accuity increased the severity rating from Level 2 (Moderate) to Level 3 (High) as the revision to the project schedule (2019.07.PM13) and revised project schedule (2019.09.PM01) are still needed to develop an updated deployment plan. Accuity will continue to monitor this preliminary concern as the plan for M&O is developed.

2019.09.PM02.R1 Develop procedures to estimate and refine DLIR resource requirements.

2019.09.PM02.R2 Develop processes to optimize utilization of DLIR project resources.

2019.10.IT01 Clarify M&O roles and responsibilities.

2019.10.IT02 Prelim Prelim Moderate Unclear M&O roles and responsibilities, and unreliable Lotus Notes system. COVID-19 responses should include consideration of Lotus Notes maintenance support if the Phase 1 go-live date and DLIR’s reliance on Lotus Notes is extended. (Updated)

06/26/20: Consideration of the unsupported Lotus Notes was not included in the change request for COVID-19. It is still unclear what the new Phase 1 go-live date will be and plans to address potential risks for continued reliance on Lotus Notes.

03/27/20, 04/24/20, 05/22/20, 06/26/20: No updates to report.

07/29/20: This was changed to a risk in the July 2020 IV&V Monthly Report. Accuity will continue to evaluate M&O as roles and responsibilities are clarified.

Data Conversion

2019.09.IT03 Prelim Prelim Low Unsupported IBM Lotus Notes Domino (Updated)

06/26/20: Consideration of the unsupported Lotus Notes was not included in the change request for COVID-19. It is still unclear what the new Phase 1 go-live date will be and plans to address potential risks for continued reliance on Lotus Notes.

03/27/20, 04/24/20, 05/22/20, 06/26/20: No updates to report.

07/29/20: This was changed to a risk in the July 2020 IV&V Monthly Report. Accuity will continue to evaluate M&O as roles and responsibilities are clarified.
<table>
<thead>
<tr>
<th><strong>DEPARTMENT</strong></th>
<th><strong>CATEGORY</strong></th>
<th><strong>PHASE</strong></th>
<th><strong>STATUS</strong></th>
<th><strong>DESCRIPTION</strong></th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>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.</td>
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<td></td>
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<td>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.</td>
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<tr>
<td></td>
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<td></td>
<td>2019.07.PG05.R3 Use performance data to monitor or evaluate project or contractor performance. Consider metrics for continuous data such as website hits, downloads, observation, open forums, or actual performance testing. Consider sources of data such as legacy systems, operations, and internal and external stakeholders.</td>
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<td></td>
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<td></td>
<td><strong>09/20/19:</strong> Accuity decreased the severity rating from Level 1 (High) to Level 2 (Moderate). The DCD Business Manager has identified remediation tasks to close data quality gaps and increases data quality in the next iteration of the project. <strong>10/25/19:</strong> DLIR continued to refine the success metrics and began to identify data sources for baseline metrics. Success metrics are expected to be finalized and communicated to stakeholders in November 2019. <strong>11/22/19 and 12/20/19:</strong> DLIR is close to finalizing and plans to post to the new DLIR website. <strong>01/24/20:</strong> DLIR formalized project success metrics. DLIR still needs to communicate these measures of success and begin collecting data. <strong>02/21/20:</strong> DLIR began to communicate project goals and success metrics to stakeholders through the DCD website. DLIR plans to also communicate the success metrics to the DataHouse development team and develop a timeline for baseline data collection. <strong>03/27/20:</strong> DLIR shared the goals and success metrics with the DataHouse Case Management development team. DLIR also developed a timeline to gather baseline data for all metrics. <strong>04/24/20, 05/22/20, 06/26/20, and 07/29/20:</strong> Progress on the success metrics stalled due to shifting priorities and changes in DLIR project resources. Accuity will continue to evaluate the collection and monitoring of success metrics data.</td>
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Project: Organization and Management

<table>
<thead>
<tr>
<th>FINDING</th>
<th>STATUS</th>
<th>RECOMMENDATION 1</th>
<th>RECOMMENDATION 2</th>
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<tbody>
<tr>
<td>2019.07.PM03</td>
<td>Open</td>
<td>Consider revising project management plans to identify the person responsible - a tip specific responsibility for each project; incorporate the lean to include an outline of DLIR and DataHouse roles and responsibilities in a personnel modification letter to all stakeholders.</td>
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**ASSESSMENT**

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<tr>
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<th>RECOMMENDATION</th>
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<tbody>
<tr>
<td>2019.07.PM02</td>
<td>R1</td>
<td>Clarify roles and responsibilities in project plan updates. The Case Management Conversion and Migration Plan (version 1.0) did delineate some responsibilities between the DataHouse Conversion and Migration Team and DLIR. DLIR plans to implement regular meetings with the Content Management development team to improve DLIR and DataHouse project team cohesion.</td>
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**RECOMMENDATION**

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<tr>
<th>PROJECT</th>
<th>ASSESSMENT</th>
<th>RECOMMENDATION</th>
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<tbody>
<tr>
<td>2019.07.PM02.R2</td>
<td></td>
<td>The DataHouse Project Manager continues to work with the DLIR Project Manager to improve DLIR and DataHouse project team cohesion.</td>
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**FINDING**

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<tr>
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<tbody>
<tr>
<td>2019.07.PM02.R3</td>
<td></td>
<td>The DataHouse Project Manager continues to work with the DLIR Project Manager to establish a communication plan to increase DLIR and DataHouse project team cohesion.</td>
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**UPDATE**

- **9/20/19:** Actualities decreased the severity rating from Level 1 (High) to Level 2 (Moderate). Although DataHouse does not plan to work directly at DLIR, they began to include DLIR in project planning, reviews, and milestone meetings. Their plan is to “shrink” the project plan; in other words, they will reduce the number of tasks and milestones.
- **10/25/19:** Progress was made to clarify roles and responsibilities in the areas of security and network connections, however, further clarification is still necessary particularly in the areas of testing and M&O.
- **11/22/19:** Roles and responsibilities for Content Management data conversion were clarified. DataHouse has included DLIR in Content Management development but DLIR is not sufficiently included in DataHouse’s data conversion, integrations, and testing activities in order to be able to adequately prepare for DLIR’s part in the process or be able to identify any risks or learn from a functional perspective.
- **12/20/19:** The Scrum methodology employed for the Case Management development promotes collaboration, open communication, and transparency between DLIR and DataHouse. However, the project team is working very well. There is limited visibility and collaboration in other areas of the project which have impacted DLIR’s understanding of and ability to properly prepare for upcoming tasks, particularly for Content Management. It is necessary to improve regular meetings with the Content Management development team to improve DLIR and DataHouse project team cohesion. DLIR plans to implement regular meetings with the Content Management development team to improve DLIR and DataHouse project team cohesion.
- **01/24/20:** No updates to report.
- **02/21/20:** The project organization of the Case Management development team is working very well. There is limited visibility and collaboration in other areas of the project which have impacted DLIR’s understanding of and ability to properly prepare for upcoming tasks, particularly for Content Management. DLIR plans to improve regular meetings with the Content Management development team to improve DLIR and DataHouse project team cohesion. DLIR plans to implement regular meetings with the Content Management development team to improve DLIR and DataHouse project team cohesion.
- **03/27/20:** Due to COVID-19, DLIR project resources were unavailable to work on the project and DLIR cancelled all project status meetings effective March 18, 2020. DataHouse continues to do what they can, however, project execution is impacted without DLIR participation in collaboration.
- **04/24/20:** As the DLIR Project Manager was temporarily reassigned, weekly project status meetings are still on hold. Some of the Case Management sprint meetings resumed with a few DLIR project resources. A few project status meetings are temporarily scheduled for May 2020.
- **05/22/20:** Although the DLIR Project Manager is still reassigned, the DLIR Executive Sponsor and the DataHouse Project Manager continued holding weekly project status meetings. The weekly Scrum standup meetings for Case Management development are on hold until further notice.
- **06/26/20:** The DataHouse Project Manager continues to work with the DLIR Executive Sponsor’s limited capacity in the content management team. Significant improvements in project organization and collaboration are not possible at this time due to limited visibility of DLIR project resources and should be reassessed as resources return to the project.
- **07/29/20:** The DLIR Project Manager returned to the project on a part-time basis and was receiving weekly project status meetings. Weekly progress meetings are still on hold as resources return to the project.
Project and configuration risks and management.

On a monthly basis, Accuity has kept the severity rating as Level 2 (Moderate). Although Accuity has observed DataHouse and DLIR to be reviewing project deliverables on schedule, roles and responsibilities, design, migration, etc. is not consistently clear. This lacks to predict deliverables and acceptance of deliverables, or how to monitor quality standards. To finding 2019.07.PM02, DLIR has not demonstrated adequate quality management processes and metrics to monitor deliverables, excepting the scheduling for the AWS vulnerability scan reports and results. Other critical DataHouse deliverables are still in progress.

On 09/20/19, Accuity decreased the severity rating from Level 1 (High) to Level 2 (Moderate). Accuity has included documentation to include the DataHouse and DLIR project team members for COVID-19. Accuity and DLIR will continue to evaluate the effectiveness of these project communications.

On 10/25/19, 11/22/19, 12/20/19, and 01/24/20, no updates to report.

On 02/21/20, DataHouse scheduled a deliverable review meeting for the AWS vulnerability scan reports and results. Other critical DataHouse deliverables are still in progress.

On 02/21/20, DLIR has been included in more DataHouse development team meetings and DataHouse's facilitation of DLIR conversations with project team members had a piecemeal understanding of the technical solution (refer to finding 2019.07.PM02), 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 was also a lack of communications regarding the upcoming build stage activities (see finding 2019.07.PM01). DLIR recommends including DLIR Project Managers in the DataHouse Project Management Plan (June 2020) to ensure communications to the DLIR Project Team.

On 03/27/20, a meeting was scheduled for early March to discuss and review DataHouse's Test Plan, however, this meeting was cancelled due to COVID-19.

On 03/31/20, DLIR increased the severity rating from Level 2 (Moderate) to Level 1 (High) and reopened the 2019.07.PM02 recommendation. DLIR and DataHouse need to improve project communications to mitigate these findings and provide adequate communications for COVID-19 responses to include consideration of DLIR project resources to perform timely deliverable reviews.

On 04/24/20, Accuity increased the severity rating from Level 2 (Moderate) to Level 1 (High) and reopened the 2019.07.PM02 recommendation. Accuity has included documentation to include the DataHouse and DLIR project team members for COVID-19. Accuity and DLIR will continue to evaluate the effectiveness of these project communications.

On 05/22/20 and 06/26/20, no updates to report.

On 07/29/20, DLIR, with the assistance of ETS, timely reviewed and approved AWS vulnerability scan reports and results. Other critical DataHouse deliverables are still pending review. DLIR will continue to evaluate the effectiveness of the DataHouse and DLIR project communications.

On 11/22/20, 12/20/20, and 01/24/20, no updates to report.

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On 03/27/20, a meeting was scheduled for early March to discuss and review DataHouse's Test Plan, however, this meeting was cancelled due to COVID-19.

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On 04/24/20, Accuity increased the severity rating from Level 2 (Moderate) to Level 1 (High) and reopened the 2019.07.PM02 recommendation. Accuity has included documentation to include the DataHouse and DLIR project team members for COVID-19. Accuity and DLIR will continue to evaluate the effectiveness of these project communications.
Further refine communication management plans. 

Segment stakeholders into groups by communication needs such as management plans.

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 dissemination of project information and that key stakeholders are regularly updated on project status. DLIR worked on plans to update the website and send out a letter to carriers regarding upcoming changes to the electronic form submittal process. Other stakeholder website and video communications are on hold due to unavailability of DLIR project resources.

All project stakeholders should be provided with regular updates on project progress and timeline. DLIR plans to develop videos for project communications. ETS OCM resource provided a script template for the planned project video communications as well as sample flyers. DLIR met with the ETS OCM resource to discuss OCM ideas. The ETS OCM resource provided a script template for the planned project video communications as well as sample flyers.

Organizational Change Management

Although projects may progress without a formal OCM approach, industry best practices support that a structured OCM approach complements project management approaches in increasing probability of project success. Performing an OCM approach with 24-48 hours will help to better prepare, engage, and support stakeholders throughout the project and to ensure that the solution is ultimately adopted and embraced by employees.

Collect baseline change awareness and change readiness measurements through surveys or interviews.

Create and mobilize a change champion and support team including key managers, technicians, key data analysts, and key IT personnel.

Implement a structured, phased, agile intervention plan to communicate, cascade project information, and educate stakeholders.

Perform regular, alignment, and awareness sessions to support change and increase adoption.

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Although projects may progress without a formal OCM approach, industry best practices support that a structured OCM approach complements project management approaches in increasing probability of project success. Performing an OCM approach with 24-48 hours will help to better prepare, engage, and support stakeholders throughout the project and to ensure that the solution is ultimately adopted and embraced by employees.

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Implement a structured, phased, agile intervention plan to communicate, cascade project information, and educate stakeholders.

Perform regular, alignment, and awareness sessions to support change and increase adoption.

- 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) in the meetings to start identifying and tracking risks jointly.
- Perform a detailed review of new items, status of open items, risk/issue owners, and mitigation plans.

Risk Management 2019.07.PM09 Issue High

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

- Only three risks and two issues have been identified by DataHouse on the project to date with no history of any risks being closed.
- The project team relies on informal risk management practices to identify and resolve risks and issues.
- The risk and issue management processes are ineffective.

- 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 and tracking the risks and issues.

- Risks and issues are critical to project success, a formal process should be implemented before moving forward in the project.

- Open 09/20/19: Accuity decreased the severity rating from Level 1 (High/Critical) to Level 2 (Moderate).
- DLIR began to develop mitigation plans for all high IV&V risks and issues.
- A DLIR Risk Manager was assigned in August 2019 and has begun to use mind mapping and a log to record risks and issues.
- The risk management process improvements noted as of 9/20/19 are still open.

- 10/25/19: DLIR began to develop mitigation plans for all high IV&V risks and issues.
- Discussions of risks at weekly project status and monthly ESC meetings are ongoing.
- Discussions of risks at weekly project status and monthly ESC meetings are still on hold.
- Additional focus on risk identification and mitigation plans is needed as the proposed plan to address COVID-19 impacts is formalized and executed (refer to findings 2020.03.PM01 and 2019.09.PM01).
ASSESSMENT CATEGORY: REQUIREMENTS MANAGEMENT

The Content Management and Case Management requirements documentation is incomplete.

The requirements for both Content Management and Case Management have already been approved; however, the requirements are incomplete, i.e., do not incorporate all contract requirements and all current project needs. Additionally, the project is currently focused on design artifacts. Therefore, 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 requirements management plan is not complete and 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 for complete and meet industry standards and best practices. Therefore, the requirements management processes should be improved prior to moving forward in the project.

RECOMMENDATION: 2019.07.PM10.R1

 Ensure requirements follow SMART (specific, measurable, actionable, realistic and time bound) guidelines. Ensure requirements are inclusive of business and user needs and include best practices. Ensure requirements documentation includes functional, performance, process, non-functional, security, and interface requirements.

Revised Content Management and Case management requirements documentation and RTM.

Additional recommendations include:
- Ensure that there is a clear understanding between DataHouse and DLIR regarding who is responsible for identifying and testing different types of requirements.
- Establish a process for prioritizing and reporting requirements.
- Establish a process for requirements traceability.

The current requirements documentation for both Content Management and Case Management includes the following:
- The requirements are incomplete (e.g., do not incorporate all contract requirements and all three project phases).
- 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.

RECOMMENDATION: 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 testing different types of requirements.
- Establish a process for prioritizing and reporting requirements.
- Establish a process for requirements traceability.

The current requirements documentation for both Content Management and Case Management includes the following:
- The requirements are incomplete (e.g., do not incorporate all contract requirements and all three project phases).
- 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.

RECOMMENDATION: 2019.07.PM10.R3

Review requirements documentation for completeness and traceability. Ensure requirements documentation includes functional, performance, process, non-functional, security, and interface requirements.

The current requirements documentation for both Content Management and Case Management includes the following:
- The requirements are incomplete (e.g., do not incorporate all contract requirements and all three project phases).
- 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.

RECOMMENDATION: 2019.07.PM10.R4

Improve requirements management processes.

- Ensure that there is a clear understanding between DataHouse and DLIR regarding who is responsible for identifying and testing different types of requirements.
- Establish a process for prioritizing and reporting requirements.
- Establish a process for requirements traceability.

The current requirements documentation for both Content Management and Case Management includes the following:
- The requirements are incomplete (e.g., do not incorporate all contract requirements and all three project phases).
- 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.

RECOMMENDATION: 2019.07.PM10.R5

Improve requirements management processes.

- Ensure that there is a clear understanding between DataHouse and DLIR regarding who is responsible for identifying and testing different types of requirements.
- Establish a process for prioritizing and reporting requirements.
- Establish a process for requirements traceability.

The current requirements documentation for both Content Management and Case Management includes the following:
- The requirements are incomplete (e.g., do not incorporate all contract requirements and all three project phases).
- 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.

RECOMMENDATION: 2019.07.PM10.R6

Improve requirements management processes.

- Ensure that there is a clear understanding between DataHouse and DLIR regarding who is responsible for identifying and testing different types of requirements.
- Establish a process for prioritizing and reporting requirements.
- Establish a process for requirements traceability.

The current requirements documentation for both Content Management and Case Management includes the following:
- The requirements are incomplete (e.g., do not incorporate all contract requirements and all three project phases).
- 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.

RECOMMENDATION: 2019.07.PM10.R7

Improve requirements management processes.

- Ensure that there is a clear understanding between DataHouse and DLIR regarding who is responsible for identifying and testing different types of requirements.
- Establish a process for prioritizing and reporting requirements.
- Establish a process for requirements traceability.

The current requirements documentation for both Content Management and Case Management includes the following:
- The requirements are incomplete (e.g., do not incorporate all contract requirements and all three project phases).
- 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.

RECOMMENDATION: 2019.07.PM10.R8

Improve requirements management processes.

- Ensure that there is a clear understanding between DataHouse and DLIR regarding who is responsible for identifying and testing different types of requirements.
- Establish a process for prioritizing and reporting requirements.
- Establish a process for requirements traceability.

The current requirements documentation for both Content Management and Case Management includes the following:
- The requirements are incomplete (e.g., do not incorporate all contract requirements and all three project phases).
- 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.

RECOMMENDATION: 2019.07.PM10.R9

Improve requirements management processes.

- Ensure that there is a clear understanding between DataHouse and DLIR regarding who is responsible for identifying and testing different types of requirements.
- Establish a process for prioritizing and reporting requirements.
- Establish a process for requirements traceability.

The current requirements documentation for both Content Management and Case Management includes the following:
- The requirements are incomplete (e.g., do not incorporate all contract requirements and all three project phases).
- 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.

RECOMMENDATION: 2019.07.PM10.R10

Improve requirements management processes.

- Ensure that there is a clear understanding between DataHouse and DLIR regarding who is responsible for identifying and testing different types of requirements.
- Establish a process for prioritizing and reporting requirements.
- Establish a process for requirements traceability.

The current requirements documentation for both Content Management and Case Management includes the following:
- The requirements are incomplete (e.g., do not incorporate all contract requirements and all three project phases).
- 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.
<table>
<thead>
<tr>
<th>OPEN FINDING</th>
<th>RECOMMENDATION</th>
<th>SUPPLEMENTAL RECOMMENDATION</th>
<th>RECOMMENDATION STATUS</th>
<th>RECOMMENDATION STATUS UPDATE</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Open</td>
<td>12/02/19</td>
<td>Accuracy has lead the overall delay around 3 days as it's a comprehensive project budget and long-term cost schedule have not been created yet. Additionally, irregular cost variance reports are not prepared or generated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Open</td>
<td>12/03/19</td>
<td>Payments have been made to gather cost information and set up budget tracking templates.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Open</td>
<td>12/03/19, 12/30/19, and 01/29/20</td>
<td>No updates to report.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Open</td>
<td>12/30/20</td>
<td>DLIR plans to develop a comprehensive project budget at the beginning of the 2021-2022 budget.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Open</td>
<td>1/01/21</td>
<td>DLIR is still reviewing recent expenditure limitations and guidance from the State Governor that may impact project spending, including planned procurement of additional project resources. Evaluation and discussion of impact criteria for COVID-19 will also be discussed at the monthly status meeting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Open</td>
<td>1/03/21</td>
<td>DLIR has changed the funding from a risk to an issue to the Datahouse Phase 1 contract amount will be fully paid prior to completion of the Phase 1 milestones. An adjustment to the payment schedule for Phase 2 and Phase 3 deliverables is needed. Payment terms for Phase 2 and Phase 3 delivery should be determined in the framework of the project plan and related change request (refer to findings 2020.03.PM01 and 2019.09.PM01).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Open</td>
<td>1/06/21</td>
<td>DLIR and Accuity are working closely to determine if Datahouse payments are appropriately managed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Open</td>
<td>1/08/21</td>
<td>DLIR and Accuity are currently discussing the payment schedule.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Open</td>
<td>1/12/21</td>
<td>DLIR and Accuity will continue to monitor project costs including the proposed payment schedule, new AWS costs from finding 2019.07.IT01, and cost management practices.</td>
</tr>
</tbody>
</table>
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.


2019.07.PM13.R5 Ensure project schedule updates are communicated to all stakeholders and revised tasks, realistic task durations, and assigned resources aligned to resource availability (refer to finding 2019.09.PM02) is needed to prevent further delays. As the availability of DLIR project resources is continuously evolving, the project schedule should be frequently reevaluated and adjusted as needed.

2019.07.PM13.R6 DataHouse is still in the process of updating the project schedule for the new plan. A detailed project schedule with specific tasks, dates, and required hours and resources for at least the first quarter of upcoming project activities. This will also provide sufficient lead time to State resources to adequately prepare for and complete project tasks. Understandably there are many unknowns in the long-term project schedule and availability of resources; however, improvements to schedule management processes are critical to minimizing further delays.

2019.07.PM13.R7 DataHouse’s revisions to the project schedule for Phase 1 tasks were tentatively approved by DLIR; however, details of resource requirements for Phase 2 work were not provided. Accuity will continue to monitor the project schedule and schedule management practices.

2019.07.PM13.R8 Accuity has been kept on a weekly reporting cycle since the start of the project. Although the Content Management go-live dates were delayed a few times since the start of the project with the Content Management go-live date now in jeopardy again. The schedule should be updated to include more detailed task listing to develop effective corrective action plans to prevent further delays.

2019.07.PM13.R9 The previous project schedule was updated with time percentages for some of the tasks; however, the Content Management go-live date has not yet been adjusted. The other schedule management issue noted as of 9/20/19 continue to limit the project’s ability to improve project performance and increase adherence to revised timelines.

2019.07.PM13.R10 No updates to report. The Content Management go-live date has not yet been adjusted.

2019.07.PM13.R11 DataHouse added more detailed task listing corrections to the project schedule. Time percentages for some of the tasks are reasonable; however, the Content Management go-live date is in jeopardy again. Schedule variance analysis is critical to determine the root cause of delays and to develop effective corrective action plans to prevent further delays.

2019.07.PM13.R12 COVID-19 will impact the current project schedule; however, the extent of the impact is indeterminable. Careful consideration is needed to estimate realistic task hours and assignment of tasks to DLIR project resources specific availability to minimize impacts to successor tasks and prevent further delays.

2019.07.PM13.R13 The previous project schedule was updated with time percentages for some of the tasks; however, the Content Management go-live date has not yet been adjusted. Accuity will continue to monitor the project schedule and schedule management practices.
2019.07.PM02: Accuity decreased the severity rating from Level 1 (High) to Level 2 (Moderate). DataHouse included in its proposal to DLIR that a well-defined interface solution is critical to the success of the project and should be fully defined in design documentation in accordance with industry standards.

Due to the recent DHS development, the interface options needed to be re-evaluated and a decision needs to be made for the interface solution to be used. Although the interface solution is not finalized yet, this is an integral to the success of the project and should be fully defined in design documentation in accordance with industry standards.

2019.07.PM13: Accuity will continue to assess the adequacy of project resources needed, estimated hours, and dates is needed (2019.07.PM13) to ensure the new plan is feasible with the available options. Additionally, DLIR should keep exploring options to obtain necessary project resources (e.g. substitutions, ETS).

2019.07.IT01: The Content Management Design Document (version 1.0) was approved by DLIR on May 6, 2019. Case Management is currently in the process of reviewing the design of the interface at the front-end and back-end. The interface solution should be clearly outlined in the document, mapped to project requirements, and communicated to DLIR.

2019.07.IT02: Document the interface solution and analysis. Informal meetings should be held to provide users on the interface solution including the following:

- How the interface will work
- How the interface will be designed
- How the interface will be implemented
- How the interface solution is implemented
- What is the impact to the users
- What is the impact to the business
- What is the impact to the end-users
- What is the impact to the infrastructure
- What is the impact to the development
- What is the impact to the testing
- What is the impact to the deployment
- What is the impact to the maintenance

Due to the recent DHS development, the interface options needed to be re-evaluated and a decision needs to be made for the interface solution to be used. Although the interface solution is not finalized yet, this is an integral to the success of the project and should be fully defined in design documentation in accordance with industry standards.

2019.07.IT02: Update the project schedule to allow resources assigned to the project.

Due to the recent DHS development, the interface options needed to be re-evaluated and a decision needs to be made for the interface solution to be used. Although the interface solution is not finalized yet, this is an integral to the success of the project and should be fully defined in design documentation in accordance with industry standards.

2019.07.IT02: Verify the proposed interface solution will work. The interface solution should be clearly outlined in the document, mapped to project requirements, and communicated to DLIR.

2019.07.IT02: Review the interface solution and analysis. The interface solution should be clearly understood by all stakeholders and should be fully documented in the project documents for future reference.
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.

Configuration Management

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.

In the Configuration Management Plan, DataHouse has not yet been included. Establishing controls to ensure a Configuration Management plan is in place begins the Build stage of Phase 3. It makes sure that all changes are properly tracked, accepted and approved which may impact system performance or quality.

2019.07.IT06.R1 Develop a formal configuration management plan.

Accuity has kept the severity rating as Level 2 (Moderate). Although Accuity obtained a better understanding of configuration management through interviews of the Content Management development teams, DataHouse is still in the process of finalizing and documenting a configuration management approach. 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.

2019.07.IT06.R2 Perform quality management activities on previously approved or submitted deliverables.

Quality Management and Testing

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

Accuity will work with DLIR to understand what additional quality management activities and metrics need to be included in the DataHouse quality management plan. DLIR needs to complete their quality management approach to outline how they plan to evaluate and ensure quality throughout the project.

Accuity will continue to evaluate the quality management plan and activities.

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 for the project, which impacts the quality of project deliverables.

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 finalized and resources assigned to perform quality management activities.

Accuity will continue to evaluate the configuration management plan and approach.
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 be used to review this project. 2019.07.IT07.R2 Finalize the security management plan. 09/20/19: Accuity has kept the severity rating as Level 2 (Moderate). The security management plan has not yet been completed. 10/25/19: Accuity increased the severity rating from Level 2 (Moderate) to Level 1 (High) due to the need for a plan or controls to be in place and implemented. 11/22/19: ETS provided some guidance regarding AWS control tower and cloud security framework considerations. 12/20/19: DLIR is first identifying security requirements (refer to finding 2019.10.IT02). No updates to report on the security management plan. 01/24/20: DataHouse clarified that security will be documented in design and other document deliverables and not in an Application Security Management Plan. 02/21/20: DLIR continued efforts to identify security requirements. DLIR plans to meet at the end of February to develop a plan to address security. 03/27/20: DLIR stakeholders agreed on a short-term plan to assess AWS security in March 2020, however, the execution of the short-term security assessment was put on hold due to COVID-19. 04/24/20: The execution of the short-term AWS security assessment is still on hold due to COVID-19. 05/22/20: As the DLIR project resources are still unavailable, the Office of Enterprise Technology Services (ETS) has agreed to assist with the short-term AWS security assessment to keep the project moving forward. 06/26/20: ETS provided a resource to supplement EDPSO’s limited availability to review AWS security. DataHouse ran a vulnerability scan for AWS resulting in a significant number of findings. A discussion of the responsibilities and timing of a comprehensive security management plan for the eCMS Project as a whole is still needed. 07/29/20: DataHouse performed remediation of AWS vulnerability scan findings and DLIR, with the assistance of ETS, reviewed and approved the results. DLIR plans to develop high-level timeline and tasks for developing the security management plan in August. Security will continue to be evaluated for the security management plans and documentation as they are finalized.
### Governance Effectiveness

<table>
<thead>
<tr>
<th>Date</th>
<th>ID</th>
<th>Status</th>
<th>Finding</th>
<th>Recommendation(s)</th>
</tr>
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<tbody>
<tr>
<td>2019.07.PG02</td>
<td>Risk</td>
<td>Moderate</td>
<td>N/A</td>
<td>The lack of a formal executive steering committee and change control board may limit objective evaluation of contractor performance and contract management.</td>
</tr>
<tr>
<td>2019.07.PG03</td>
<td>Risk</td>
<td>Moderate</td>
<td>N/A</td>
<td>The unclear DataHouse contract terms may limit objective evaluation of contractor performance and contract management.</td>
</tr>
<tr>
<td>2019.09.IT01</td>
<td>Positive</td>
<td>N/A</td>
<td>N/A</td>
<td>The DataHouse team's swift and effective response to issues and risks showed high adaptability and resilience in project development.</td>
</tr>
<tr>
<td>2019.09.IT02</td>
<td>Positive</td>
<td>N/A</td>
<td>N/A</td>
<td>The lack of a formal executive steering committee and change control board may limit objective evaluation of contractor performance and contract management.</td>
</tr>
</tbody>
</table>

### Recommendations

1. Consider including measurable success metrics (refer to finding 2019.07.PG05).
2. Consider the need to outline roles and responsibilities between DLIR and DataHouse (refer to finding 2019.07.PM02).
The DLIR Project Manager is a dedicated project lead who works collaboratively with internal stakeholders. The eCMS Project Manager is facilitating the and has the authority to make key decisions. Additionally, the eCMS Project Manager has oversight of the necessary business processes needed to support the project. The positive nature and collaboration approach is evident with the success of the DCD-related stakeholder groups. This has come about through the consultation with various stakeholder groups. The DLIR eCMS Project advanced for 10 months without finalizing the MOU between DHS and DLIR. As the proposed solution is no longer viable for the current fiscal year, an alternative solution may need to be updated. Although the eCMS Project lead was the DLIR product owner, the project still plans to leverage DHS's enterprise licenses for FileNet and Datacap. Before moving forward with the project, DLIR should finalize all necessary agreements to ensure the alternative solution is viable and prevent further delays.

### 2019.07.PM03.R3

**Identify and complete all critical tasks for the new solution.**

A lack of clarity on DataHouse's development methodology may not allow or adequately prepare stakeholders to participate readily. DataHouse is using a traditional development methodology that is not ideal for the State of Hawaii. The project is in trouble and needs to be redirected. DataHouse has stated that they will be required to rework the functionality of the solution. Although the project is in trouble, there is no evidence that a new DataHouse Product Manager has been appointed. The DataHouse project has not yet been restructured to accommodate the change in leadership. The project is at risk of being delayed.

### 2019.07.PM03.R4

**Communicate an approach for excising future phases.**

Consider a twin track approach for technical methodologies with the current and future State of Hawaii environments. Identify the key stakeholders and roles for the twin track approach. The twin track approach will enable the project to leverage the lessons learned from the current environment while focusing on the future environment. The twin track approach will be used to identify the key technical and business requirements for the current and future environments. The twin track approach will be used to identify the key technical and business requirements for the current and future environments.

### 2019.07.PM04

**Finalize the MOU to leverage DHS's enterprise licenses for FileNet and Datacap.**

Eversource 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 reliance on 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 for the current fiscal year, an alternative solution may need to be updated. Although the eCMS Project lead was the DLIR product owner, the project still plans to leverage DHS's enterprise licenses for FileNet and Datacap. Before moving forward with the project, DLIR should finalize all necessary agreements to ensure the alternative solution is viable and prevent further delays.

### 2019.07.PM04.R1

**Complete the MOU to leverage Eversource's enterprise licenses for FileNet and Datacap.**

As the project advanced for 10 months without finalizing the MOU between DHS and DLIR. As the proposed solution is no longer viable for the current fiscal year, an alternative solution may need to be updated. Although the eCMS Project lead was the DLIR product owner, the project still plans to leverage DHS's enterprise licenses for FileNet and Datacap. Before moving forward with the project, DLIR should finalize all necessary agreements to ensure the alternative solution is viable and prevent further delays.

### 2019.07.PM04.R2

**DLIR should lead all discussions and negotiations of vendor contracts or agency agreements.**

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 reliance on 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 may need to be updated. Although the eCMS Project lead was the DLIR product owner, the project still plans to leverage DHS's enterprise licenses for FileNet and Datacap. Before moving forward with the project, DLIR should finalize all necessary agreements to ensure the alternative solution is viable and prevent further delays.
There are a number of items in the DataHouse BAFO that are no longer feasible based on the inability to leverage the IBM FileNet environment. As DHS will no longer be providing access to their IBM FileNet environment, DLIR will need to re-evaluate the total solution and consider all updated technological opportunities available today. DLIR should ensure that DataHouse was approved by DLIR. As a comprehensive analysis was not prepared and there is still a need for additional clarification regarding certain aspects of the replacement solution, Accuity will continue to monitor plans for AWS security under finding 2019.07.IT07, AWS M&O roles and responsibilities under the new preliminary concern 2019.10.IT02, and AWS costs under finding 2019.07.PM12.

Accuity had also recommended that a comprehensive technical analysis be prepared on the replacement solution, however, DLIR decided not to formally document the analysis as they are comfortable in the technology and proposal selection based on reading of AWS whitepapers, the information provided by DataHouse, and discussions with ETS and EDPSO.

Business Process

Reengineering opportunities prior to system design and development may require additional effort to correct.

10/25/19 and 11/22/19: BPR opportunities continue to be discussed during sprint sessions, however, identified opportunities are not formally tracked. 12/20/19: The Case Management user story tracker tool identifies which user stories resulted in BPR. The IV&V recommendations made at 2019.07.PG05.R1, 2019.07.PG05.R2, 2019.07.PG05.R3, 2019.07.PG05.R4, and 2019.07.PG05.R5 identified additional BPR opportunities that are being discussed during sprint sessions. The Case Management user story tracker tool identifies which user stories resulted in BPR.

Design

Case Management is currently in the design phase and design documents have not been provided. The Content Management Design Document (version 1.0) approved by DLIR on May 6, 2019. The recent DHS development will require design documents to be updated after an information management hosting infrastructure solution is selected. However, given plans to re-develop the Content Management design documents will need to be updated post-contract award if the renewed system is similar to the existing system in terms of operational and stakeholder requirements.

11/05/2019: Update the Content Management design documents.

Update the Content Management design documents to include all changes that are required after the information management hosting infrastructure solution is selected.

11/05/2019: Update the Content Management design documents to include: 1) all changes that are required after the information management hosting infrastructure solution is selected, 2) the updated system requirements, and 3) the updated system requirements document.

Data Converters

Case Management data conversion documents were based on incomplete, inaccurate, and outdated requirements. Case Management is currently in the data conversion phase and data conversion documents have not been provided.

10/25/19: The Content Management Conversion and Migration Plan document (version 1.0) approved by DLIR on 09/05/19. The recent DHS development will require design documents to be updated after an information management hosting infrastructure solution is selected. However, given plans to re-develop the Content Management design documents will need to be updated post-contract award if the renewed system is similar to the existing system in terms of operational and stakeholder requirements.

11/05/2019: Update the Content Management conversion and migration documents.

Update the Content Management conversion and migration documents to include all changes that are required after the information management hosting infrastructure solution is selected.
# Appendix E: Prior IV&V Reports

<table>
<thead>
<tr>
<th>AS OF DATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/30/19</td>
<td>Initial On-Site IV&amp;V Review Report</td>
</tr>
<tr>
<td>09/20/19</td>
<td>Monthly On-Site IV&amp;V Review Report</td>
</tr>
<tr>
<td>10/25/19</td>
<td>Monthly On-Site IV&amp;V Review Report</td>
</tr>
<tr>
<td>11/22/19</td>
<td>Monthly On-Site IV&amp;V Review Report</td>
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<td>01/24/20</td>
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<td>02/20/20</td>
<td>Monthly On-Site IV&amp;V Review Report</td>
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Appendix F: Comment Log on Draft Report
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