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October 5, 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.

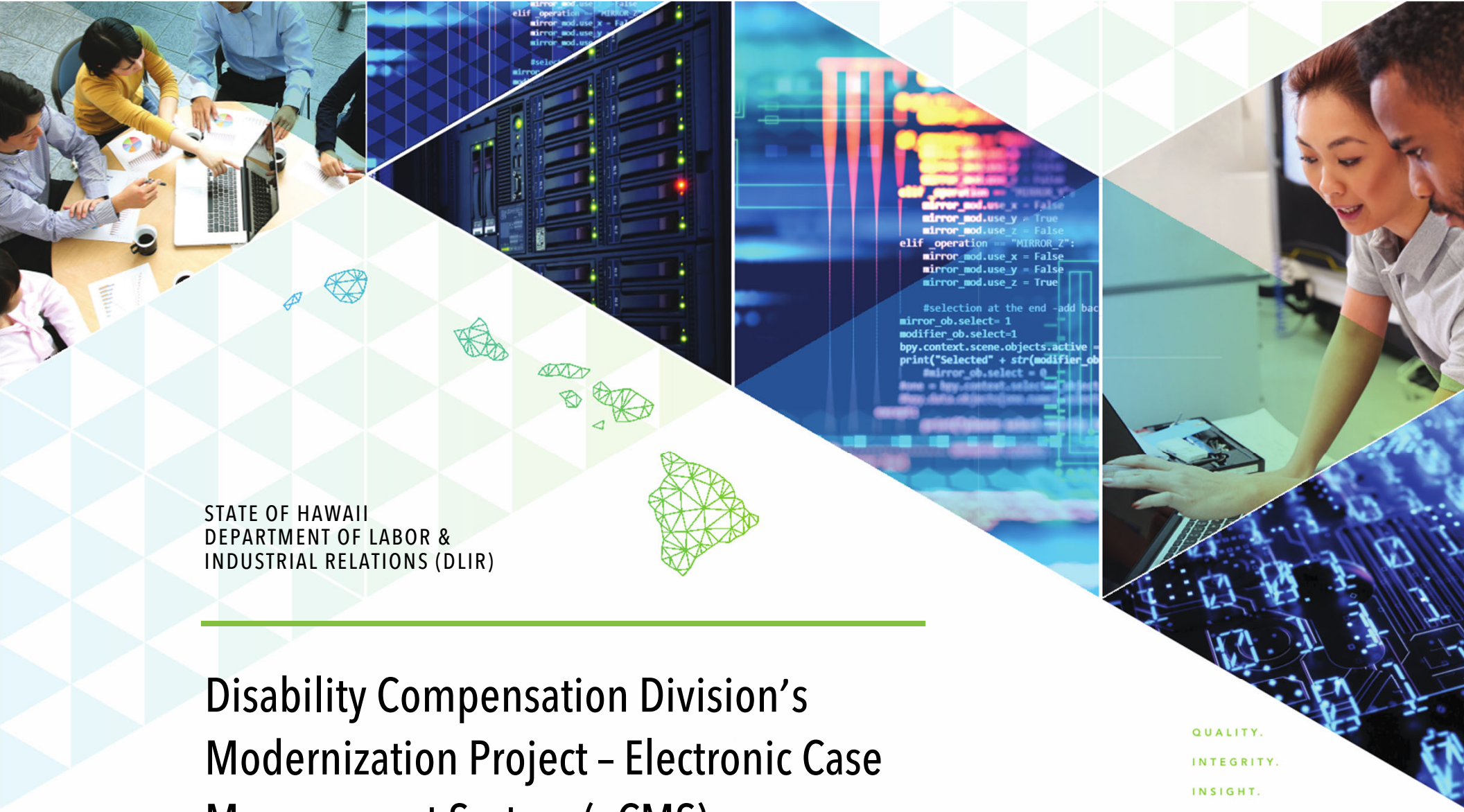
In accordance with HRS section 93-16, this report may be viewed electronically at http://ets.hawaii.gov (see "Reports").

Sincerely,

Douglas Murdock (Oct 5, 2020 12:44 HST)

DOUGLAS MURDOCK
Chief Information Officer
State of Hawai'i

Attachment (1)



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

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

MONTHLY ON-SITE IV&V REVIEW REPORT

August 21, 2020 | Version 1.0

REPORT FINALIZED

September 30, 2020

QUALITY.
INTEGRITY.
INSIGHT.

ACcuity LLP
CERTIFIED
PUBLIC
ACCOUNTANTS

An independent member of
bakertilly
INTERNATIONAL

Table of Contents

EXECUTIVE SUMMARY 3

Background 3

IV&V Dashboard 4

FINDINGS AND RECOMMENDATIONS BY ASSESSMENT AREA 6

Overall Rating 6

Program Governance 7

Project Management 8

Technology 12

Appendix A: IV&V Criticality and Severity Ratings 15

Appendix B: Industry Standards and Best Practices 17

Appendix C: Interviews, Meetings, and Documents 20

Appendix D: Prior Findings Log 24

Appendix E: Prior IV&V Reports 46

Appendix F: Comment Log on Draft Report 47

Document History

DATE	DESCRIPTION	AUTHOR	VERSION
09/04/20	Monthly On-site IV&V Review Report Draft created	Julia Okinaka	0.0
09/30/20	Monthly On-site IV&V Review Report Final made change on page 5 and 9 and Appendix D based on comment submitted in Appendix F.	Julia Okinaka	1.0

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 and requirements gathering stage for Phase 2. Limited progress on Phase 1 development continues based on the availability of necessary DLIR project resources. The focus of our IV&V activities for this report included an assessment of project organization and management as well as the beginning of a two-month in-depth assessment of requirements, business process reengineering (BPR), and data conversion.

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 August 21, 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.

PLANNING

"Plans are nothing; planning is everything."

- Dwight D. Eisenhower

PROJECT ASSESSMENT

AS OF AUGUST 21, 2020

SUMMARY RATINGS

OVERALL RATING

Y

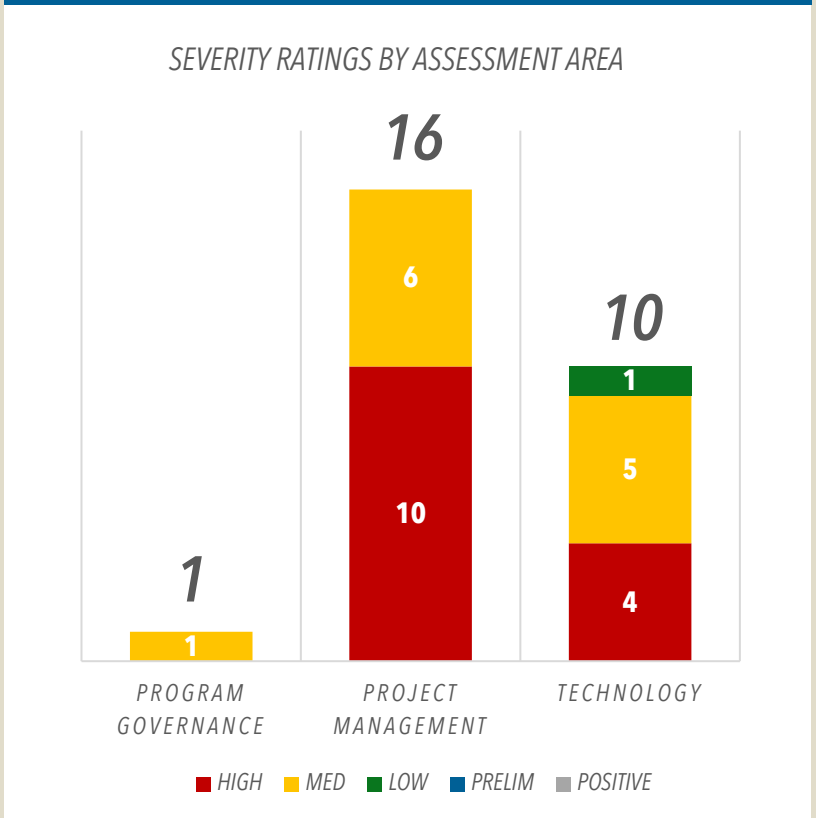
Deficiencies were observed that merit attention and remediation in a timely manner.

PROGRAM GOVERNANCE	G
PROJECT MANAGEMENT	R
TECHNOLOGY	Y

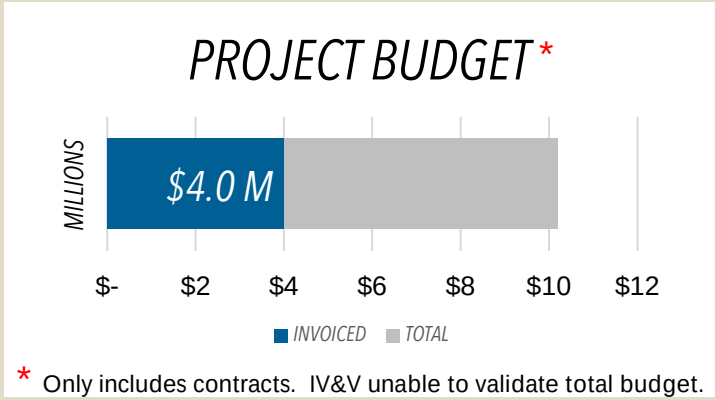
CRITICALITY RATINGS

R	Y	G	NA
HIGH	MEDIUM	LOW	N/A

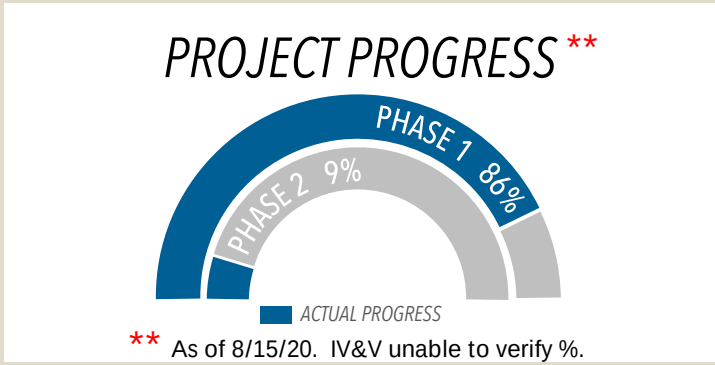
27 OPEN FINDINGS



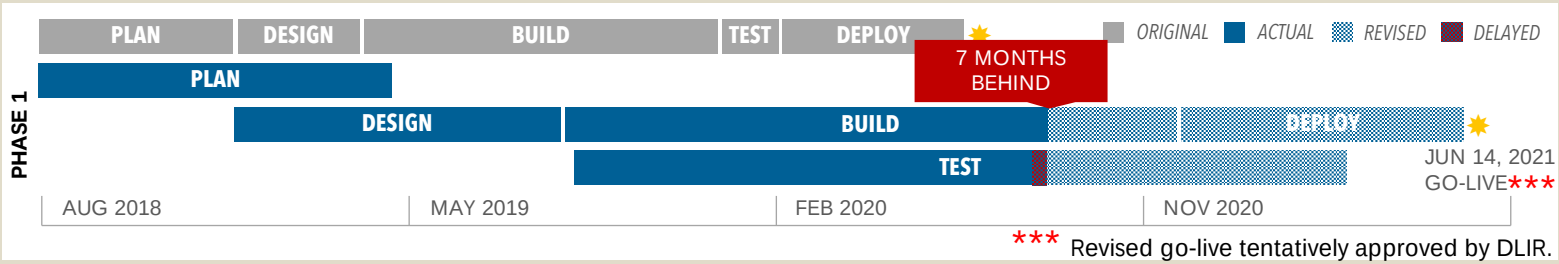
48 OPEN RECOMMENDATIONS



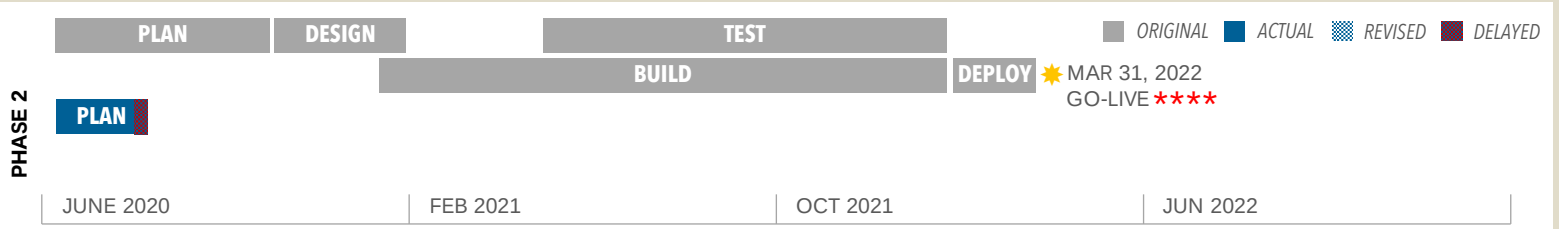
* Only includes contracts. IV&V unable to validate total budget.



** As of 8/15/20. IV&V unable to verify %.



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



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

ASSESSMENT AREA & RATINGS SUMMARY

AS OF AUGUST 21, 2020

JUN	JUL	AUG	IV&V ASSESSMENT AREA	IV&V OBSERVATIONS
Y	NA	Y	*Overall*	IV&V had increased access to project information and activities to assess an overall rating this month. There are still pockets of limited visibility that may prevent IV&V identification of project risks. Phase 1 development and testing activities continue to be dependent on the availability of key DLIR project resources. DataHouse and DLIR are moving the project forward with Phase 2 requirements gathering efforts, however, the Phase 2 project plan and project schedule tasks are still pending with no estimated timeline for completion. Although significant uncertainty due to the worsening COVID-19 situation in Hawaii makes it difficult to know the exact road ahead, proactive planning and contingency planning are critical for anticipating changes and minimizing impacts to the project. A clear understanding of the intended project activities and the required resources and hours needed for the next rolling two months are necessary to timely coordinate and make adjustments for the limited 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.
G	G	G	*Program Governance*	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.
R	R	R	*Project Management*	The DLIR Project Manager transitioned back to full-time status on the project and the key Phase 2 DLIR Subject Matter Experts (SMEs) were able to participate in on-going requirements gathering sessions. DataHouse and DLIR are doing what they can to keep the project moving forward but the COVID-19 pandemic continues to significantly impact the availability of DLIR project resources, particularly the key DLIR SMEs needed for timely completion of Phase 1 tasks. DataHouse made improvements to Phase 2 requirements gathering processes to improve completeness of requirements documentation. There has not been significant progress to address other prior IV&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, change, and risk management. DLIR plans to prioritize open findings and resume efforts to develop and execute mitigation plans.
Y	Y	Y	*Technology*	DLIR continues to develop the security management plan including selection of the security tools and framework. IV&V does not have adequate visibility of DataHouse development, test, or related integration and data conversion activities. IV&V also does not have visibility of DLIR's lite user acceptance testing (UAT) of Case Management. DLIR's lite UAT review was expected to be completed in July but was extended to the end of August. DataHouse plans to proceed with Phase 1 development efforts even if DLIR testing is not completed as scheduled. Without a quality management plan in place, it is unclear how quality and user satisfaction will be ensured if the necessary DLIR project resources do not have the availability to timely complete testing.

FINDINGS AND RECOMMENDATIONS BY ASSESSMENT AREA

OVERALL RATING

The overall rating is 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). The tables below summarize the criticality ratings for each IV&V Assessment Category in the three major IV&V Assessment Areas. One IV&V Assessment Category improved from the prior report while the rest remained the same. DLIR and DataHouse are moving the project forward with Phase 2 work, however, the overall rating also reflects the need to improve many foundational project processes, the impact of the COVID-19 pandemic on DLIR project resources, and the incomplete planning for Phase 2.

AT-A-GLANCE

Keeping project moving **FORWARD**

ELABORATE Phase 2 activities and tasks

Complete Phase 2 **PLANNING**

Improve **FOUNDATIONAL** project processes

JUN	JUL	AUG	PROGRAM GOVERNANCE
G	G	G	Governance Effectiveness
Y	Y	Y	Benefits Realization

JUN	JUL	AUG	TECHNOLOGY
Y	Y	Y	System Software, Hardware, and Integrations
G	G	G	Design
Y	Y	Y	Data Conversion
R	R	R	Quality Management and Testing
Y	Y	Y	Configuration Management
R	R	R	Security

JUN	JUL	AUG	PROJECT MANAGEMENT
R	R	R	Project Organization and Management
R	R	R	Scope and Requirements Management
R	R	R	Cost, Schedule, and Resource Management
R	R	R	Risk Management
R	R	R	Communications Management
Y	Y	Y	Organizational Change Management (OCM)
G	G	G	Business Process Reengineering (BPR)
NA	NA	NA	Training and Knowledge Transfer

PROGRAM GOVERNANCE

Governance Effectiveness

Benefits Realization

G PROGRAM GOVERNANCE

JUN	JUL	AUG	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
G	G	G	Governance Effectiveness	The eCMS Project Executive Steering Committee (ESC) meets monthly to discuss project updates and major decisions. 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.	0	0	0
Y	Y	Y	Benefits Realization	No significant updates since the prior report. DLIR still needs to begin collecting and monitoring success metrics data (2019.07.PG05).	0	1	0

PROJECT MANAGEMENT

Project Organization and Management

Scope and Requirements Management

Cost, Schedule, and Resource Management

Risk Management

Communications Management

Organizational Change Management

Business Process Reengineering

Training and Knowledge Transfer

R PROJECT MANAGEMENT

JUN	JUL	AUG	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
R	R	R	Project Organization and Management	DataHouse and DLIR are doing what they can to keep the project moving forward. Phase 2 requirements gathering efforts kicked-off as scheduled, however, the Phase 2 project plan and project schedule tasks are still pending with no estimated timeline for completion (2020.08.PM01). Additionally, with Phase 1 activities scheduled to resume simultaneously with on-going Phase 2 activities, additional clarity is still needed regarding the path forward (2020.03.PM01). Although significant uncertainty due to the worsening COVID-19 situation in Hawaii makes it difficult to know the exact road ahead, proactive planning and contingency planning are critical for anticipating changes and minimizing impacts to the project. There has not been significant progress to address prior IV&V findings (refer to Appendix D: Prior Findings Log) related to a number of foundational project management processes (2020.07.PM01). DLIR plans to prioritize open findings and resume efforts to develop and execute mitigation plans. Improvements to the change management process (2019.09.PM01) and project organization and collaboration between DLIR and DataHouse (2019.07.PM02) are also still needed. The DLIR Project Manager returned to full-time status on the project. DLIR is catching up on some project management activities that were on hold as well as scheduling additional meetings to make progress in critical areas of the project. DLIR is still behind on review of pending project deliverables (2019.07.PM03).	1	6	0

PROJECT MANAGEMENT

Project Organization and Management

Scope and Requirements Management

Cost, Schedule, and Resource Management

Risk Management

Communications Management

Organizational Change Management

Business Process Reengineering

Training and Knowledge Transfer

JUN	JUL	AUG	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
			Scope and Requirements Management	Requirements gathering for Phase 2 kicked-off as scheduled in early August. DataHouse made improvements to the requirements management processes including timely sharing of requirements gathering documentation and action item lists. Phase 1 requirements traceability (2019.10.PM01) and documentation (2019.07.PM10) still need improvement. Additionally, DLIR's review of their third-party vendor's requirements assessment results is still pending. IV&V will continue an evaluation of requirements management as a focus area in September 2020.	0	2	0
			Cost, Schedule, and Resource Management	The COVID-19 pandemic continues to significantly impact the availability of DLIR project resources, particularly those needed for timely completion of Phase 1 tasks (2020.03.PM01). The necessary DLIR SMEs were able to participate in the Phase 2 requirements gathering sessions. DLIR should keep exploring options to obtain necessary project resources (2019.07.PM14) and optimize utilization of assigned resources (2019.09.PM02). A detailed schedule of Phase 2 tasks, due dates, and required resources is still pending (2020.08.PM01). With Phase 1 and Phase 2 activities to begin occurring simultaneously, DLIR needs a clear understanding of project activities and required resources for the next rolling two months to timely coordinate, assess capacity, and make adjustments for limited availability of State resources. 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.	0	4	0

PROJECT MANAGEMENT

Project Organization and Management

Scope and Requirements Management

Cost, Schedule, and Resource Management

Risk Management

Communications Management

Organizational Change Management

Business Process Reengineering

Training and Knowledge Transfer

JUN	JUL	AUG	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
R	R	R	Risk Management	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.	0	1	0
R	R	R	Communications Management	Monthly ESC meetings and weekly project status meetings between DataHouse and DLIR continued. DataHouse and DLIR held an initial meeting with a limited group of external stakeholders and plans to hold periodic update meetings going forward. Improvements are needed to increase the effectiveness and timeliness of project team (2019.07.PM06) and stakeholder (2019.07.PM07) communications.	0	2	0
Y	Y	Y	Organizational Change Management (OCM)	No significant updates since the prior report. A structured OCM approach is still needed (2019.07.PM08) to ensure stakeholders accept and embrace changes.	0	1	0
G	G	G	Business Process Reengineering (BPR)	DataHouse facilitated discussions of BPR improvements and opportunities during the Phase 2 requirements gathering sessions. IV&V will continue an evaluation of BPR as a focus area in September 2020.	0	0	0
NA	NA	NA	Training and Knowledge Transfer	The Content Management training was rescheduled for October 2020. IV&V does not have adequate visibility on-going training planning activities. Additionally IV&V does not have an understanding of the training approach and knowledge transfer strategy.	0	0	0

FINDING #: 2020.08.PM01	STATUS: OPEN	TYPE: RISK	SEVERITY: 2

TITLE: UNCLEAR PHASE 2 PROJECT PLAN AND SCHEDULE

Finding: Inadequate planning and lack of a detailed project schedule for Phase 2 may impact the execution of Phase 2 activities and result in delays.

Industry Standards and Best Practices: PMI PMBOK summarizes best practices for project management plans in Chapter 4.2 and project schedules in Chapter 6.5.

Analysis: DataHouse's updated project management plan and project schedule was scheduled for completion in July 2020. The task is not yet completed and there is no estimated timeline for completion. Some of the details of the Phase 2 planning were verbally discussed including DataHouse's deliverables, assigned resources, and general approach, however, additional planning is needed. The current project management plan was last updated in August 2019 and many of the processes are outdated or need improvement (2020.07.PM01). Additionally, the eCMS Project is now operating under completely different circumstances due to the COVID-19 pandemic (2020.03.PM01). The following are some of the project management plan details that are unclear or need improvement:

- How Phase 1 and Phase 2 activities will be performed simultaneously with limited DLIR project resources; priority of Phase 1 or Phase 2 tasks; process for resolving scheduling conflicts.
- Detailed project schedule with Phase 2 tasks, due dates, and required resources.
- Improved process for managing DLIR project resource constraints; contingency plans for DLIR project resources; planning of DLIR project resources ability to work remotely including access, equipment, and technology.
- How the Content Management and Case Management components for the Phase 2 will be developed; the number of Content Management forms in scope for Phase 2.
- Roles and responsibilities for Phase 2 DataHouse and DLIR project team members.
- Updated process for project communications for identification of Phase 2 internal and external stakeholders; alternative communication channels in place of standing project meetings or changes in working arrangements.
- Process and metrics for evaluating project progress and performance for timely detection of issues.

Although significant uncertainty due to the COVID-19 pandemic makes it difficult to know the exact road ahead, proactive planning and contingency planning are critical for anticipating changes and minimizing impacts to the project.

Recommendations: 2020.08.PM01.R1 – *Complete Phase 2 planning.*

- Ensure mutual understanding of Phase 2 plan and approach between DataHouse and DLIR.
- Provide adequate details of Phase 2 in the project schedule.
- Consider building contingency plans for COVID-19 into the project management plan and processes.

TECHNOLOGY

JUN	JUL	AUG	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
Y	Y	Y	System Software, Hardware, and Integrations	DataHouse continues to develop Phase 1 Content Management and Case Management solutions. DataHouse is scheduled to resume Phase 1 Case Management sprints in September 2020. The interface solution remains unclear (2019.07.IT02). 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. DataHouse and DLIR began to clarify maintenance and operation (M&O) roles and responsibilities but further clarification is still needed (2019.09.IT02).	0	2	0
G	G	G	Design	No significant updates since the prior report. DataHouse refines the Content Management and Case Management design during development and periodically updates design documents. IV&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&V Assessment Category.	0	0	0

TECHNOLOGY

System Software, Hardware, and Integrations

Design

Data Conversion

Quality Management and Testing

Configuration Management

Security

JUN	JUL	AUG	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
			Data Conversion	Content Management data conversion activities progressed while Case Management data conversion activities are on hold for Epic 4. IV&V does not have adequate visibility of data conversion activities to assess the progress or approach for data conversion. DataHouse and DLIR have a meeting planned for late August to discuss Content Management data conversion processes and the DLIR data conversion testing scheduled for September 2020. DLIR and DataHouse's data conversion plans and processes still need to be developed or further clarified (2019.11.IT01) and an unsupported legacy system may impact data conversion (2019.09.IT03).	0	2	0
			Quality Management and Testing	As a part of the Scrum methodology, user review and feedback are a part of each sprint and epic. DLIR rescheduled SMEs to complete lite user acceptance testing (UAT) review on the Epic 2 and 3 builds in August. IV&V does not have visibility of the on-going DLIR SME review to report the progress or assess the effectiveness of this testing. In an effort to prevent further delays for Phase 1 development, DataHouse plans to proceed with completing Epic 3 and beginning Epic 4 even if DLIR testing is not completed as scheduled. Without a quality management plan or approach in place (2019.07.IT05), it is unclear how DLIR and DataHouse will ensure quality and user satisfaction if the necessary DLIR project resources do not have the availability to timely complete testing. DataHouse is currently performing various system and integration testing, however, IV&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).	0	3	0

TECHNOLOGY

System Software, Hardware, and Integrations

Design

Data Conversion

Quality Management and Testing

Configuration Management

Security

JUN	JUL	AUG	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
Y	Y	Y	Configuration Management	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).	0	1	0
R	R	R	Security	DLIR continues to develop the security management plan including selection of the security tools and framework. DLIR and ETS are meeting regularly to discuss and align plans for implementing security policies and procedures. 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 plans to complete the high-level security timeline and tasks in September. DataHouse continues to perform the monthly Amazon Web Services (AWS) vulnerability scan. DLIR's review and approval of the latest scan is pending.	0	2	0

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.

TERMS

RISK
An event that has not happened yet.

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

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

POSITIVE
Celebrates high performance or project successes.

PRELIMINARY CONCERN
Potential risk requiring further analysis.

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.

SEVERITY 1: High/Critical level

SEVERITY 2: Moderate level

SEVERITY 3: Low level

Appendix B: Industry Standards and Best Practices

STANDARD	DESCRIPTION
ADA	Americans with Disabilities Act
ADKAR®	Prosci ADKAR: Awareness, Desire, Knowledge, Ability, and Reinforcement
BABOK® v3	Business Analyst Body of Knowledge
DAMA-DMBOK® v2	DAMA International's Guide to the Data Management Body of Knowledge
HIPAA	Health Insurance Portability and Accountability Act of 1996
MARS-E v2.0	CMS Minimum Acceptable Risk Standards for Exchanges – Exchange Reference Architecture Supplement
MITA v3.0	Medicaid Information Technology Architecture
PMBOK® v6	Project Management Institute (PMI) Project Management Body of Knowledge
SWEBOK v3	Guide to the Software Engineering Body of Knowledge
TOGAF® v9.2	The Open Group Architecture Framework Standard
COBIT® 2019 Framework	Control Objectives for Information and Related Technologies Framework
IEEE 828-2012	Institute of Electrical and Electronics Engineers (IEEE) Standard for Configuration Management in Systems and Software Engineering
IEEE 1062-2015	IEEE Recommended Practice for Software Acquisition
IEEE 1012-2016	IEEE Standard for System, Software, and Hardware Verification and Validation
IEEE 730-2014	IEEE Standard for Software Quality Assurance Processes
ISO 9001:2015	International Organization for Standardization (ISO) Quality Management Systems – Requirements
ISO/IEC 25010:2011	ISO/International Electrotechnical Commission (IEC) Systems and Software Engineering – Systems and Software Quality Requirements and Evaluation (SQuaRE) – System and Software Quality Models
ISO/IEC 16085:2006	ISO/IEC Systems and Software Engineering – Life Cycle Processes – Risk Management

STANDARD	DESCRIPTION
IEEE 16326-2019	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Life Cycle Processes – Project Management
IEEE 29148-2018	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Life Cycle Processes – Requirements Engineering
IEEE 15288-2015	ISO/IEC/IEEE International Standard – Systems and Software Engineering – System Life Cycle Processes
IEEE 12207-2017	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Software Life Cycle Processes
IEEE 24748-1-2018	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Life Cycle Management – Part 1: Guidelines for Life Cycle Management
IEEE 24748-2-2018	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Life Cycle Management – Part 2: Guidelines for the Application of ISO/IEC/IEEE 15288 (System Life Cycle Processes)
IEEE 24748-3-2012	IEEE Guide: Adoption of ISO/IEC TR 24748-3:2011, Systems and Software Engineering – Life Cycle Management – Part 3: Guide to the Application of ISO/IEC 12207 (Software Life Cycle Processes)
IEEE 14764-2006	ISO/IEC/IEEE International Standard for Software Engineering – Software Life Cycle Processes – Maintenance
IEEE 15289-2019	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Content of Life Cycle Information Items (Documentation)
IEEE 24765-2017	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Vocabulary
IEEE 26511-2018	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Requirements for Managers of Information for Users of Systems, Software, and Services
IEEE 23026-2015	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Engineering and Management of Websites for Systems, Software, and Services Information
IEEE 42010-2011	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Architecture Description
IEEE 29119-1-2013	ISO/IEC/IEEE International Standard – Software and Systems Engineering – Software Testing – Part 1: Concepts and Definitions
IEEE 29119-2-2013	ISO/IEC/IEEE International Standard – Software and Systems Engineering – Software Testing – Part 2: Test Processes
IEEE 29119-3-2013	ISO/IEC/IEEE International Standard – Software and Systems Engineering – Software Testing – Part 3: Test Documentation
IEEE 29119-4-2015	ISO/IEC/IEEE International Standard – Software and Systems Engineering – Software Testing – Part 4: Test Techniques

STANDARD	DESCRIPTION
IEEE 1484.13.1-2012	IEEE Standard for Learning Technology – Conceptual Model for Resource Aggregation for Learning, Education, and Training
ISO/IEC TR 20000-11:2015	ISO/IEC Information Technology – Service Management – Part 11: Guidance on the Relationship Between ISO/IEC 20000-1:2011 and Service Management Frameworks: ITIL®
ISO/IEC 27002:2013	Information Technology – Security Techniques – Code of Practice for Information Security Controls
SAML v2.0	Security Assertion Markup Language v2.0
SoaML v1.0.1	Service Oriented Architecture Modeling Language
CMMI-DEV v1.3	Capability Maturity Model Integration for Development
FIPS 199	Federal Information Processing Standard (FIPS) Publication 199, Standards for Security Categorization of Federal Information and Information Systems
FIPS 200	FIPS Publication 200, Minimum Security Requirements for Federal Information and Information Systems
NIST 800-53 Rev 4	National Institute of Standards and Technology (NIST) Security and Privacy Controls for Federal Information Systems and Organizations
NIST Cybersecurity Framework v1.1	NIST Framework for Improving Critical Infrastructure Cybersecurity
LSS	Lean Six Sigma

Appendix C: Interviews, Meetings, and Documents

INTERVIEWS

DATE	INTERVIEWEE
	None

MEETINGS

DATE	MEETING DESCRIPTION
08/04/20	IV&V DCD Update Meeting
08/05/20	Phase 2 Kick-off and Requirements Gathering Session
08/06/20	Phase 2 Requirements Gathering Session
08/07/20	IV&V Update and Planning Meeting
08/10/20	IV&V DCD Update Meeting
08/11/20	Weekly PM Status Meeting
08/11/20	Phase 2 Requirements Gathering Session
08/13/20	IV&V DCD Update Meeting
08/13/20	Phase 2 Requirements Gathering Session
08/13/20	Security Working Session
08/14/20	Monthly eCMS Steering Committee Meeting
08/17/20	Carrier's Electronic Filing of WC-1's Through Salesforce Session
08/18/20	IV&V DCD Update Meeting
08/18/20	Weekly PM Status Meeting
08/18/20	Phase 2 Requirements Gathering Session

MEETINGS (CONTINUED)

DATE	MEETING DESCRIPTION
08/19/20	TDI Working Session
08/20/20	Phase 2 Requirements Gathering Session
08/20/20	Security Working Session
08/20/20	IV&V DCD Update Meeting

DOCUMENTS

TYPE	DOCUMENT
Request for Proposal	State of Hawaii DLIR DCD RFP No. RFP-17-002-DCD (Release Date 04/12/18)
DataHouse Proposal	DataHouse eCMS Best and Final Offer (BAFO) Proposal (Dated 06/20/18)
Request for Proposal	State of Hawaii DLIR DCD IV&V RFP No. RFP-18-001-DCD (Release Date 12/28/18)
Contract	Contract between State of Hawaii and DataHouse Consulting Inc. (Effective 08/27/18)
Project Management	DataHouse Project Management Plan 1.3 (Updated 08/30/19)
Project Management	DataHouse Project Status Report (Status Date 08/08/20 for reporting period 06/01 – 06/15/20, finalized 08/14/20)
Project Management	DataHouse Project Status Report (Status Date 08/09/20 for reporting period 06/16 – 06/30/20, finalized 08/14/20)
Project Management	DataHouse Project Status Report (Status Date 08/19/20 for reporting period 07/01 – 07/15/20, pending DLIR approval)
Project Management	DataHouse Project Status Report (Status Date 08/22/20 for reporting period 07/16 – 07/31/20, pending DLIR approval)
Project Management	Change Log (Updated 08/21/20)
Project Management	Change Request (CR004) Automate Open Close Appeal (Revised 08/11/20)
Risk and Issues	RAID (Risk Action Issue Decision) Log (Updated 08/21/20 by DataHouse Project Manager)
Schedule	eCMS Microsoft Project Plan as of 08/15/20 (MPP file)

DOCUMENTS (CONTINUED)

TYPE	DOCUMENT
Development	DataHouse Development Team Status Meeting Minutes for 06/22/20
Development	DataHouse Development Team Status Meeting Minutes for 07/01/20
Development	DataHouse Development Team Status Meeting Minutes for 07/08/20
Development	DataHouse Development Team Status Meeting Minutes for 07/15/20
Development	DataHouse Development Team Status Meeting Minutes for 07/22/20
Development	DataHouse Development Team Status Meeting Minutes for 07/29/20
Development	DataHouse Development Team Status Meeting Minutes for 08/12/20
Development	DataHouse Development Team Status Meeting Minutes for 08/19/20
Requirements	DataHouse Phase 2 Case Management Kickoff & Requirements Sessions
Requirements	Phase 2 Case Management Requirements Gathering Meeting Notes for 08/05/20-08/06/20
Requirements	Phase 2 Case Management Requirements Gathering Meeting Notes for 08/11/20
Requirements	Phase 2 Case Management Requirements Gathering Meeting Notes for 08/18/20
Requirements	Phase 2 Case Management Requirements Gathering Meeting Notes for 08/13/20
Requirements	Phase 2 Case Management Requirements Gathering Meeting Notes for 08/20/20
Requirements	Phase 2 Case Management Process Flows (as of 08/12/20)
Requirements	Phase 2 Case Management Process Flows (as of 08/17/20)
Requirements	Phase 2 Case Management Process Flows (as of 08/19/20)
Requirements	Phase 2 Case Management Requirements Gathering Spreadsheet (as of 08/19/20)
Requirements	Phase 2 Case Management Requirements Gathering DCD Action Items and Documents Received (as of 08/18/20)
Requirements	Phase 2 Case Management Requirements Gathering Sample DCD TDI Documents (20 files)

DOCUMENTS (CONTINUED)

TYPE	DOCUMENT
Requirements	Phase 2 Case Management Requirements Gathering Sample DCD PHC Documents (4 files)
Security	DataHouse Email re: Notes for 07/27/20 Meeting for 07/17/20 AWS UAT Vulnerability Scan Assessment (07/30/20)
Security	AWS Inspector Vulnerability Scan on UAT as of 07/16/20 (PDF and Excel file)
Security	AWS Inspector False Positive Documentation (4 files)
Governance	eCMS ESC Meeting Agenda (08/14/20)
Governance	DataHouse ESC Presentation (08/14/20)
Integrations	DataHouse eCMS Carrier's Electronic Filing of WC-1s Presentation
State	State of Hawaii Twelfth Supplementary Emergency Proclamation (08/20/20)
State	State of Hawaii EM 20-06 Update on Management of the Coronavirus Relief Fund (07/31/20)
State	State of Hawaii EM 20-07 FB 2021-23 Program Review (08/17/20)

Appendix D: Prior Findings Log

Appendix D: Prior Findings Log

ASSESSMENT CATEGORY	FINDING ID	TYPE	ORIGINAL SEVERITY	CURRENT SEVERITY	FINDING	ANALYSIS	RECOMMENDATION ID	RECOMMENDATION	SUPPLEMENTAL RECOMMENDATION	FINDING STATUS	FINDING STATUS UPDATE	CLOSED DATE	CLOSURE REASON
Project Organization and Management	2020.07.PM01	Risk	Moderate	Moderate	Limited progress to address previously identified deficiencies for foundational project processes may result in reoccurring issues and delays.	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.	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.	Open	08/21/20: DataHouse is currently conducting requirements gathering sessions and made improvements to the requirements management processes including timely sharing of requirements documentation and reviewing original contract requirements. DLIR plans to prioritize open findings and resume efforts to develop and execute mitigation plans. Accuity will continue to evaluate progress to address open findings.		
							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.				
Project Organization and Management	2020.03.PM01	Issue	High	Moderate	The COVID-19 pandemic is impacting project execution although the extent of the impact to project costs and the project schedule as well as the potential impacts to quality and project success are currently indeterminable.	The COVID-19 pandemic has created uncertainty with respect to the timely completion of the project and its cost. Understandably, DLIR has diverted project resources to the UI Division to respond to the skyrocketing number of unemployment claims. This finding focuses on the impacts of COVID-19 specific to the eCMS Project. 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 state-wide stay-at-home orders were put into effect through April 30, 2020. •Currently only a few DLIR project resources, including the DCD Executive Sponsor and DLIR Project Manager, are still working in the office or remotely but time dedicated to project work has been drastically reduced due to competing priorities. DLIR ceased actively performing or participating in many key project management activities. •Key DLIR Subject Matter Experts (SME) are currently unavailable to the eCMS Project. The DLIR SMEs are critical to the Case Management system development process due to the valuable knowledge and input of business operations they provide to the development teams to clarify and refine requirements. •Many DLIR SMEs have been temporarily assigned to assist the UI Division's overwhelmed operations and a timeline of when they would return to DCD or eCMS Project work is unknown. •Even when stay-at-home orders are lifted, the mounting DCD operational work will limit DLIR SME capacity to participate in or perform project work. •The Office of Enterprise Technology Services (ETS) and DLIR Electronic Data Processing Systems Office (EDPSO) stakeholders playing an essential role in project governance and project security management activities are busy addressing other pressing department and state IT issues. •DLIR's plans to procure necessary testing, data conversion, and cloud support resources has been put on hold due to COVID-19. •Although a few DataHouse resources were reassigned to assist with higher priority and more urgent UI Division system support, DataHouse continues to move forward with development work. However, DataHouse's progress is partially limited due to dependencies on DLIR's completion of assigned tasks. The drastic reduction in already constrained DLIR project resources has almost entirely halted project work on the state side which will impact project costs and schedule and potentially impact quality and project success. Estimates of potential impacts to project costs and schedule have not yet been determined and progress has not been made to develop mitigation plans that would help to reduce or limit the impacts. The severity rating and the following IV&V recommendations are based on a project-focused perspective, with an understanding that higher DLIR department level priorities may limit the project's ability to respond effectively and timely. Although this finding is reported under the Project Organization and Management IV&V Assessment Category, this finding also impacts the criticality ratings for the Governance Effectiveness; Cost, Schedule and Resource Management; Risk Management; Communications Management; Data Conversion; Quality Management and Testing; and Security categories. In addition to the specific recommendations made as a part of this finding, the IV&V recommendations made at findings 2019.09.PM02, 2019.07.PM06, 2019.07.PM09, 2019.07.PM12, 2019.07.PM13, and 2019.07.PM14 will also help to address this issue.	2020.03.PM01.R1	Explore possible ways to keep the project moving forward with available resources.	•Evaluate DLIR SMEs availability and bandwidth to work on the project. •Consider reshuffling of user stories in current and upcoming sprints and how to best utilize available DLIR SMEs.	Open	04/24/20: 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. DLIR plans to have an ESC meeting in May 2020. IV&V understands that other DLIR priorities are affecting the project's ability to respond effectively and timely. 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 is in the process of formalizing this proposed plan in a change request for DLIR approval. DataHouse only has a couple weeks left of Phase 1 work that can be done without key DLIR project resources. The change request for the proposed plan to begin Phase 2 work needs to be prepared and approved timely and prudently. To prevent further delays, it is also critical for DLIR and DataHouse to work together to carefully plan out the new project course, identify impacts, and develop risk mitigation strategies. 06/26/20: Accuity decreased the severity rating from Level 1 (High) to Level 2 (Moderate) as DataHouse presented the high-level plan and timeline to move Phase 2 project work up at the ESC meeting in June 2020. Additionally, a formal change request was also submitted which similarly summarized the high-level plan and included the timeline and payment schedule for Phase 2 and 3. DLIR approved the change request but additional clarity is needed regarding the path forward. Details regarding tasks, dates, and specific State resources are critical to minimize further delays as the COVID-19 pandemic is still significantly limiting the availability of DCD, DLIR EDPSO, and ETS resources. A detailed schedule for at least the next rolling two months will help State resources to have a clear understanding of the new plan and sufficient lead time to be able to adequately prepare for upcoming project activities. Risks and risk mitigation plans related to the new plan also need to be managed and communicated. 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 availability in the upcoming months as DCD employees are slowly transitioned back from the UI Division. With recent increases in cases in Hawaii, circumstances could potentially evolve rapidly. While the plan to move forward with Phase 2 work gives DataHouse more options to keep the project moving forward, 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 (2019.07.PM13), resource management (2019.09.PM02), change management (2019.09.PM01), and risk management (2019.07.PM09) will better position the project to handle and adjust to changes going forward. 08/21/20: DataHouse kicked-off Phase 2 requirements gathering sessions. With Phase 1 activities scheduled to resume simultaneously with on-going Phase 2 activities, additional clarity is still needed regarding the path forward. Additionally, the worsening COVID-19 situation in Hawaii creates a lot of uncertainty with regards to DLIR project resources and work arrangements. A clear understanding of intended project activities as well as contingency plans for key project resources and possible work-from-home arrangements are essential to minimizing further delays. Accuity will continue to evaluate COVID-19 response and plans.		
							2020.03.PM01.R2	Formulate a plan for how to respond to COVID-19 impacts to the project.	•DataHouse and DLIR, with input from the ESC, must come together to decide on how to best proceed. •Carefully assess the situation and individually log all of the specific impacts to the project in the risk register, including direct and indirect impacts. •Evaluate alternative courses of action and contingency plans for each specific impact identified. •Consider adjusting the frequency of communications and reviews of response plans to support the pace of evolving circumstances.				

ASSESSMENT CATEGORY	FINDING ID	TYPE	ORIGINAL SEVERITY	CURRENT SEVERITY	FINDING	ANALYSIS	RECOMMENDATION ID	RECOMMENDATION	SUPPLEMENTAL RECOMMENDATION	FINDING STATUS	FINDING STATUS UPDATE	CLOSED DATE	CLOSURE REASON
Quality Management and Testing	2020.02.IT01	Risk	High	High	The DataHouse Test Plan is incomplete and does not adequately inform DLIR of the testing approach and scope which may impact the execution of testing activities.	DataHouse drafted the Test Plan Version 0.0, pending DLIR review and approval. The test plan does not include or clearly explain the following: •The scope of the test plan is incomplete (e.g., performance, load, volume, AWS environments). •The testing approach differs from DataHouse's Best and Final Offer (BAFO) (e.g., regression testing, test-driven development (TDD)). •The security testing does not address all security requirements outlined in the DataHouse contract or verbally discussed with DataHouse (e.g., AWS vulnerability scan). •Specifics of the test approach are not detailed (e.g., test design techniques for all testing types, automation testing tools, test data requirements, data scrubbing procedures, metrics for test cases and coverage of code). •The test tasks included in the project schedule are incomplete (e.g., security tests, test plan Section 8 tasks). •Incomplete test deliverables and unclear delivery (e.g., missing a test completion report, defect reports not delivered to DLIR, test results delivered through the requirements traceability matrix (RTM)). •There are no defined test management monitoring and control processes. •A naming convention of test documentation files is not established for easy retrieval and location. A lack of clarity of DataHouse's testing approach may not allow DLIR to appropriately develop their own test plan or ensure testing activities are adequately performed. Additionally, a lack of mutual understanding and inadequate test management processes could impact the execution of testing activities.	2020.02.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.	Open	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. 04/24/20, 5/22/20, and 06/26/20: DLIR's review and approval of the DataHouse Test Plan is still pending due to COVID-19. 07/29/20 and 08/21/20: DataHouse is currently performing various system and integration testing, however, IV&V does not have adequate visibility into DataHouse testing activities or test documentation to provide an assessment. Accuity will reassess when meetings are held regarding the DataHouse test plan and evaluate any improvements made to test processes.		
							2020.02.IT01.R2	Develop adequate test management processes and procedures.	•Consider a process for monitoring and reporting test status and results. •Consider a process for authorization of test data.				
Data Conversion	2019.11.IT01	Risk	Moderate	Moderate	Unclear data conversion plans and processes may reduce DLIR's ability to prepare for proper data conversion.	The Content Management Conversion and Migration (version 1.2 pending DLIR approval) and Case Management Conversion and Migration (version 1.1 pending DLIR approval) describe the data conversion process and roles and responsibilities between DataHouse and DLIR. DLIR is responsible for performing UAT on the data and ultimately signing off on the final reconciliation reports but has not yet formalized plans for these tasks. The data conversion plans do not provide sufficient details and DLIR does not have insight to the DataHouse data conversion teams' activities, tools, reports, risks and issues, and testing. As such, DLIR is unable to properly prepare for their part in the process and will not be able to adjust their data conversion test plans for maximum efficiency. Additionally, DLIR has not finalized plans for scanning current paper files to ensure necessary data quality to support system use at go-live. The IV&V recommendations made at 2019.07.PM02.R3 and 2019.07.PM13.R2 regarding DataHouse including DLIR in project activities and adding detailed tasks to the project schedule will also address this finding. Below are additional recommendations to further improve data conversion plans and activities.	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. •Explain the process for how the data conversion plans will be updated for changes in system requirements. •Provide details on timing, number of data extractions and tests to be performed, and necessary remapping of data.	Open	12/20/19: The Content Management data conversion plan v1.3 was updated to include a sample report from the data conversion tool. DLIR still needs to understand what the report represents and what steps the data conversion tool is performing to generate the report. 01/24/20: DLIR plans to procure additional resources to support data conversion activities. 02/21/20: DataHouse provided additional details of Case Conversion tasks and dates. 03/27/20: DLIR's plan to procure additional resources for data conversion activities is on hold due to COVID-19 . 04/24/20: DataHouse is exploring options to improve the Case Management data quality and data conversion process. Changes to the documented process should be adequately discussed with DLIR to ensure changes are understood and appropriately approved (see also the 2019.09.PM01 Change Management finding). 05/22/20 and 06/26/20: No updates to report. 07/29/20: The Content Management data conversion plan v1.4 was updated for one of the recent Content Management change requests. IV&V does not have adequate visibility of data conversion activities to assess the progress or approach for data conversion. 08/21/20: DataHouse and DLIR have a meeting planned for late August to discuss Content Management data conversion processes and the DLIR data conversion testing scheduled for September 2020. Accuity will evaluate data conversion plans as progress is made.		
							2019.11.IT01.R2	Formalize DLIR data conversion test plans.	•Focus DLIR tests to address identified data conversion risks and issues. •Estimate data conversion test resource needs and ensure adequate resources are identified, trained, and scheduled (refer to findings 2019.09.PM02 and 2019.07.PM14).				
							2019.11.IT01.R3	Formalize DLIR Case Management data conversion scanning plans.	•Evaluate the impact on operations and project success of different data conversion scanning approach options. •Estimate scanning time requirements and begin to schedule or acquire necessary resources (refer to findings 2019.09.PM02 and 2019.07.PM14).				

ASSESSMENT CATEGORY	FINDING ID	TYPE	ORIGINAL SEVERITY	CURRENT SEVERITY	FINDING	ANALYSIS	RECOMMENDATION ID	RECOMMENDATION	SUPPLEMENTAL RECOMMENDATION	FINDING STATUS	FINDING STATUS UPDATE	CLOSED DATE	CLOSURE REASON
Scope and Requirements Management	2019.10.PM01	Risk	High	High	The current RTM documentation and tool may hinder traceability, which may impact the ability to ensure the overall eCMS solution fulfills all requirements and provides context and expectations for design, development, and testing.	Added complexity to requirements traceability is due to the current requirements management process. Requirements documentation was developed separate from the DataHouse contract requirements and more detailed requirements were developed by the Content Management and Case Management development teams to use for development. As a result, there is duplication of requirements in the RTM which will likely impede traceability to requirements throughout the life of the project. DataHouse made incremental improvements to the RTM. The requirements documentation were traced to the use cases used by the Content Management development team or user stories used by the Case Management development team. DataHouse contract requirements were also added to the RTM but have not yet been traced to the requirements used for development. Requirements are not currently traced to project objectives and success metrics to ensure requirements add business value or to acceptance criteria to ensure stakeholder satisfaction. Additionally, the RTM is maintained in Microsoft Excel which limits version-control, efficient collaboration and review, and integration with testing.	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 detailed requirements to reduce redundancy in traceability to design and testing. •Trace requirements to the project objectives success metrics (refer to finding 2019.07.PG05) to ensure each approved requirement adds business value. •Add acceptance criteria to the RTM to ensure stakeholder satisfaction. •Consider use of a requirements management tool with greater functionality.	Open	11/22/19 and 12/20/19: The Case Management development team began adding acceptance criteria for user stories. No other significant improvements for traceability were made. 01/24/20: DLIR and DataHouse discussed and clarified the process for traceability. Additionally, DataHouse confirmed that all Case Management user stories and Content Management use cases will be traced to testing documentation. 02/21/20: DLIR plans to procure a resource to assist with evaluating requirements and the traceability of the RTM. 03/27/20, 04/24/20, 05/22/20, and 06/26/20: DLIR procured a resource to help with their review of requirements documentation for completeness and traceability, however, DLIR did not complete their review of the vendor's results due to COVID-19. 07/29/20: IV&V did not observe or have access to information to verify any progress made in the current month. 08/21/20: DataHouse is reviewing contract requirements during the Phase 2 requirements gathering sessions. IV&V does not have access to an updated RTM. Accuity will evaluate the RTM as improvements are made.		
Quality Management and Testing	2019.10.IT01	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 3, 2019. Due to the need to focus resources on the AWS setup and network connections, DataHouse is now targeting to complete the test plan in November 2019. DLIR planned to complete the DLIR test plan in October 2019. Due to resource constraints and the need to work on other DLIR IT initiatives, the DLIR test plan expected completion date was revised to November 2019 and the plan may be combined with the DataHouse test plan. As 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 DLIR test resources.	2019.10.IT01.R1	Finalize the test plan.	•Identify applicable test standards and requirements. •Delineate roles and responsibilities between DataHouse and DLIR (refer to finding 2019.07.PM02). •Estimate test resource needs and ensure adequate resources are identified, trained, and scheduled (refer to findings 2019.09.PM02 and 2019.07.PM14).	Open	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 walked through the tool that will be used and the steps to perform and document preliminary UAT for each user story at the end of each development Epic. The DataHouse and DLIR test plans are still pending. 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 DLIR 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 time of completion is uncertain given limited DLIR project resources. 04/24/20: DLIR's plan to procure additional resources to assist with testing activities is still on hold. DLIR continued to make progress drafting the DLIR 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 DLIR test plan, DLIR SMEs may not have a clear understanding of the review purpose and process to effectively perform the testing. 07/29/20 and 08/21/20: DLIR's lite UAT review of Epic 2 and 3 builds is still on-going. IV&V does not have adequate visibility of the DLIR SME review to report the progress or assess the effectiveness of this testing. Accuity will evaluate DLIR's test plan when finalized.		

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Security	2019.10.IT02	Risk	High	High	Lack of formalized security policies and procedures may impact the security and privacy of the data and may lead to project delays.	DLIR currently does not have formal security policies to determine security requirements for the eCMS Project and does not have security procedures in place to adequately protect eCMS Project data. The lack of policies primarily impacts the completion of the AWS setup and the Content Management solution component. Security requirements for the cloud environment must be determined and controls implemented before the AWS environments can be used for planned data conversion and testing activities. The determination of security requirements is critical as data conversion activities are already delayed for the AWS setup and testing activities are to begin in November 2019. The development of formalized policies will also impact the application security management plan and design that DataHouse is responsible for (refer to finding 2019.07.IT07). Security policies and the resulting security requirements should be determined immediately to prevent further delay of the project.	2019.10.IT02.R1	Formalize security policies.	•Work with ETS to align DLIR policies with State policies and/or a standard security framework. •Consider prioritizing security policies that are most relevant for use of cloud services and data protection (e.g., security logging and monitoring, MFA, remote access, encryption of data-at-rest and data-in-transit)	Open	11/22/19: DLIR began working with EDPSO and ETS to identify security requirements. 12/20/19 and 01/24/20: Efforts are underway to identify minimum security requirements with a focus on AWS and implementing security controls to allow AWS to be ready for use. 02/21/20: 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 security with ETS. DLIR DCD and DLIR EDPSO are considering procurement of resources to assist with AWS security and M&O. 03/27/20: The EDPSO vendor drafted 32 security policies at the end of February 2020, however, DLIR's review was not completed due to COVID-19. 04/24/20, 05/22/20, 06/26/20, and 07/29/20: The review of the draft security policies is still on hold due to unavailability of DLIR project resources. 08/21/20: DLIR and ETS discussed security frameworks and possible options for formalizing security policies and procedures. Accuity will evaluate the security policies, requirements, and procedures as they are finalized.		
							2019.10.IT02.R2	Formalize and implement security procedures.	•Clarify roles and responsibilities for security controls between DLIR and ETS. •Identify specific resources to perform security procedures. •Consider prioritizing security procedures that are necessary for the operation of the AWS environments.				
Project Organization and Management	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 go-live date were approved by DLIR but not documented in Change Requests or a Change Log. Additionally, the change management process does not have built in mechanisms to ensure that impacted documents are updated for the change and changes are appropriately communicated to impacted stakeholders.	2019.09.PM01.R1	Document changes in Change Requests, with an impact assessment, and the Change Log in accordance with the Project Management Plan.		Open	10/25/19: DataHouse began to summarize changes in the Change Log. DataHouse is in the process of formalizing Change Requests for the project schedule and AWS. DLIR is also evaluating AWS Control Tower options which may result in a Change Request. DLIR also defined thresholds for changes that are reported to the eCMS Executive Steering Committee (refer to finding 2019.07.PG02) and DataHouse initiated discussions on the requirements prioritization and change process (refer to finding 2019.07.PM05). 11/22/19: Entries were added to the Change Log but the Change Requests for the project schedule and AWS were still not drafted. 12/20/19 and 01/24/20: No updates to report. 02/21/20: 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. Accuity reviewed the draft AWS change request and noted inconsistencies with what was verbally discussed and approved between DataHouse and DLIR in July 2019 as a no cost change. The change request also does not include the impact analysis prescribed by the Project Management Plan. There have not been any drafts of change requests for schedule changes including dates that extend beyond the DataHouse contract period. 03/27/20: No updates to report. 04/24/20: Two change requests for the Content Management solution were approved by DLIR. Critical change requests for AWS still need to be agreed on and schedule changes that extend beyond the DataHouse contract period still need to be formally documented and approved. Additionally, changes to baseline plans (e.g. Case Management data conversion 2019.11.IT01) and reasons for changes should be documented and approved. 05/22/20: 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 performed to ensure the proposed plan is feasible and the path forward is clear. The change request should include details such as specific DLIR resource requirements, project schedule changes, adjustments to the payment schedule for revised milestone completion, and any risks and mitigation plans related to the proposed plan. The change request should also document the other options considered and reasons supporting the selection of the specific option. Other critical change requests identified in previous months are still pending. 06/26/20: The COVID-19 change request was approved by DLIR, however, the change request did not include a thorough impact analysis, risks and mitigation plans related to the new plan (2019.07.PM09), details of required DLIR resources and hours/dates needed to execute the new plan (2019.07.PM13), or revisions to the Phase 1 schedule and payment schedule for the delayed Phase 1 completion (2019.07.PM12). Other critical change requests identified in previous months are still pending. 07/29/20 and 08/21/20: No updates to report. Accuity will review the change requests as they are finalized and evaluate improvements to the Change Log.		
							2019.09.PM01.R2	Refine the change management process for greater clarity and effectiveness.	•Consider setting thresholds or criteria for changes that go through different approval processes. •Define the different approval processes (e.g., project manager, product owners, change control board, steering committee). •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.				

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Cost, Schedule and Resource Management	2019.09.PM02	Risk	Prelim	High	Undefined resource management processes and procedures may result in unidentified resource requirements, inadequate resources, or project resources that are not optimally utilized. (Updated)	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 Project Management Plan (version 1.3) includes a human resource management section that outlines the high-level roles and responsibilities of various team members but does not define a process for how resources will be managed. This will become more critical for DLIR as the project gears up for more resource demanding activities including data conversion, testing, and sprint reviews. Additionally, DLIR project team resources are not fully dedicated to the project and still perform other job duties. Developing processes and procedures to track and quantify upcoming resource needs, identify available resources, procure or obtain commitments of resources, manage resource schedules, communicate with assigned resources and their supervisors, and train resources for assigned tasks will help to minimize project delays. DLIR developed a rough estimate of hours to perform scanning and data entry of Case Management paper files but more precise estimates based on a trial run of sample cases and a decision on what cases must be converted by go-live is needed (refer also to finding 2019.11.IT01). Additionally, DLIR needs to perform an analysis to determine how many resources can be acquired with budgeted funds and whether those acquired resources will be able to complete necessary data conversion activities by the targeted go-live. DLIR has not yet completed a test plan (refer to finding 2019.10.IT01), estimated resource requirements for testing, or formalized a plan for scheduling testers. The IV&V recommendations made at 2019.07.PM14.R1 and 2019.07.PM14.R2 regarding evaluating resource needs and resource reports will also address this finding. Below are additional recommendations to further improve data conversion plans and activities.	2019.09.PM02.R1	Develop procedures to estimate and refine DLIR resource requirements.	•Detail necessary steps and information needed to estimate and refine resources requirements. •Consult DataHouse for input on upcoming activities that require DLIR resources and clarify expectations of resources. •Assign responsibility for and establish target due dates to develop resources estimates for major project activities (e.g., data conversion, testing).	Open	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. 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 1 (High) as the need to better estimate resource requirements and optimize utilization of limited DLIR project resources will be critical for making realistic and feasible adjustments to the project schedule to account for COVID-19 impacts. 05/22/20: Specific DLIR resource requirements should be included as a part of the proposed plan (refer to finding 2020.03.PM01), related change request (refer to finding 2019.09.PM01), and revised project schedule (2019.07.PM13). This will help to ensure that any DLIR resources that are required in the proposed plan will be available to perform the assigned tasks during the scheduled dates and have adequate bandwidth to complete the assigned tasks within the expected timeframe. 06/26/20: DLIR resource requirements related to the new plan were not provided. DataHouse is still in the process of updating the project schedule for the new plan. With very limited availability of DCD, EDPSO, and ETS resources, it is critical that resources are managed effectively. 07/29/20: 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. State resources need a clear understanding of upcoming project activities and sufficient lead time to adequately prepare for and complete project tasks. 08/21/20: The necessary DLIR SMEs were able to participate in the Phase 2 requirements gathering sessions. With Phase 1 and Phase 2 activities to begin occurring simultaneously, improved resource management processes are needed to timely coordinate, assess capacity, and make adjustments within DLIR project resource constraints. Accuity will continue to evaluate resource management practices.		
							2019.09.PM02.R2	Develop processes to optimize utilization of DLIR project resources.	•Consider working with managers of project resources to reassign team members' other job duties. •Consider periodically reconfirming and renewing resource commitments to the project. •Ensure team members understand their responsibilities (e.g., testing, sprint user story contact, project communications, OCM) and assignments. •Ensure team members are properly trained and prepared to perform their assignments. •Explore use of tools for resource calendars and tracking of team member assignment progress and completion.				
System Software, Hardware and Integrations	2019.09.IT02	Prelim	Prelim	Moderate	Unclear M&O roles and responsibilities may impact operational readiness after transition. (Updated)	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).	2019.09.IT02.RI	Clarify M&O roles and responsibilities.	•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.	Open	10/25/19, 11/22/19, 12/20/19, and 01/24/20: Accuity will continue to monitor this preliminary concern as the plan for M&O is developed. 02/21/20: DataHouse clarified that the Content Management and Case Management systems will be turned over to DLIR at the go-live in November 2020. Further discussion is needed to clarify interim M&O processes and the knowledge transfer plan to prepare DLIR for turnover. 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. 08/21/20: DLIR began clarifying responsibility and enterprise tools with ETS and plans to begin discussions with DataHouse in September 2020. Accuity will continue to evaluate M&O as roles and responsibilities are clarified.		

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Data Conversion	2019.09.IT03	Prelim	Prelim	Low	Unsupported IBM Lotus Notes Domino Case Management may impact the execution of data conversion activities. (Updated)	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 and potentially the overall system development.	2019.09.IT03.RI	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.	Open	10/25/19, 11/22/19, 12/20/19, 01/24/20, and 02/21/20: DLIR is working with the State of Hawaii State Procurement Office (SPO) and the vendor to get the maintenance service required. 03/27/20: No updates to report. 04/24/20 and 05/22/20: DLIR and DataHouse's evaluation of options for 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. 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. 07/29/20: This was changed to a risk in the July 2020 IV&V Monthly Report. 08/21/20: No updates to report. Accuity will continue to monitor this preliminary concern.		
Benefits Realization	2019.07.PG05	Risk	High	Moderate	Not defining, tracking, or using clear and measurable goals and success metrics to evaluate project and contractor performance may reduce benefits expected at project completion.	The eCMS Project does not have a project charter that would have helped to formalize the project goals, target benefits, and success metrics at the start of the project. Based on informal recommendations made by Team Accuity during the initial IV&V on-site review, DLIR is in the process of creating a project charter that includes clear goals and success metrics. The lack of clear and measurable goals and success metrics makes it difficult to determine if the project and technical solution will achieve the desired level of improvement or benefits that justify the project's financial investment. Goals and success metrics need to be defined before going any further in the project as they should be guiding all key decisions throughout the entire project.	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.	Open	09/20/19: Accuity decreased the severity rating from Level 1 (High) to Level 2 (Moderate). The DCD Business Manager has been assigned the task of developing and monitoring eCMS Project success metrics with the support and oversight of the DCD Executive Sponsor. The DCD Business Manager drafted some preliminary metrics for consideration that will continue to be refined and finalized. 10/25/19: 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. 11/22/19 and 12/20/19: DLIR is close to finalizing and plans to post to the new DLIR website. 01/24/20: DLIR formalized project success metrics. DLIR still needs to communicate these measures of success and begin collecting data. 02/21/20: 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 to collect baselines for all metrics. 03/27/20: DLIR shared the goals and success metrics with the DataHouse Case Management development team. DLIR also developed a timeline to collect baseline data for all metrics, however, the timing may now be impacted by COVID-19. 04/24/20, 05/22/20, 06/26/20, 07/29/20, and 08/21/20: 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.		
							2019.07.PG05.R2	Collect baseline and project performance data.	•Consider methods for collecting data such as surveys, queries, observation, open forums, or actual performance testing. •Consider sources of data such as legacy systems, operations, and internal and external stakeholders.				
							2019.07.PG05.R3	Use performance data to monitor or evaluate project or contractor performance.					

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Project Organization and Management	2019.07.PM02	Risk	High	High	The current project management organization may hinder project performance.	The eCMS Project has failed to achieve team synergy between DLIR and DataHouse project team members and appear to work as separate teams instead of one. DataHouse works almost exclusively off-site except for designated meetings, workshops, and design sessions and DLIR is not included in many project design or development activities. The unclear contract terms regarding roles and responsibilities between DLIR and DataHouse (refer to finding 2019.07.PG03), physical separation of the project team, and limited collaboration or DLIR involvement have all contributed to the siloed workstreams. This has also led to ineffective communications within the project team (refer to finding 2019.07.PM06).	2019.07.PM02.R1	Clarify roles and responsibilities between DLIR and DataHouse.	•Consider revising project management plans to identify the person responsible and list specific responsibilities for each project management area. •Consider the need to include an outline of DLIR and DataHouse roles and responsibilities in a contract modification (refer to finding 2019.07.PG03).	Open	09/20/19: Accuity decreased the severity rating from Level 1 (High) to Level 2 (Moderate). Although DataHouse does not plan to work onsite at DLIR, they began to include DLIR in sprint planning, review, and retrospective meetings. This has given DLIR more insight into project status and roles and responsibilities. The DLIR Project Manager and DCD Executive Sponsor feel that there is more overall project cohesion and that the DataHouse Project Manager's communication is effective via phone, email, text, Go To Meetings, and in-person meetings. As noted above at finding 2019.07.PG03, DLIR plans to 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. 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 Case 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 issues from a business/user perspective. 12/20/19: The Scrum methodology employed for the Case Management development promotes collaboration, open communication, and transparency between DLIR and DataHouse. Increased collaboration or at least understanding of other aspects of the project is still needed. 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 implement regular meetings with the Content Management development team and also with the other DataHouse team members responsible for data conversion, AWS setup, and interfaces. Clarification of roles and responsibilities is still needed for testing and M&O. 03/27/20: Due to COVID-19, DLIR project resources were unavailable to work on the project and DLIR cancelled all project meetings effective March 18, 2020. DataHouse continues to do what they can, however, project execution is impacted without DLIR participation or 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 tentatively scheduled for May 2020. 05/22/20: Although the DLIR Project Manager is still reassigned, the DCD Executive Sponsor and the DataHouse Project Manager began holding weekly project status meetings. The weekly Scrum standup meetings for Case Management and periodic Content Management check-in meetings are still on hold. 06/26/20: The DataHouse Project Manager continues to work with the DCD Executive Sponsor's limited capacity to coordinate project activities. Significant improvements in project organization and collaboration are not possible at this time due to limited availability 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 is resuming weekly project status meetings. 08/21/20: The DLIR Project Manager returned to full-time status on the project and began resuming more standing DLIR meetings as well as scheduling additional meetings to make progress in critical areas of the project. Accuity will continue to evaluate the clarity of roles and responsibilities and observe the effectiveness of project organization.		
							2019.07.PM02.R2	The DataHouse Project Manager should work onsite at DLIR through project completion to improve DLIR and DataHouse project team cohesion.					
							2019.07.PM02.R3	Include DLIR in project activities and communications to increase DLIR and DataHouse project team cohesion.					

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Project Organization and Management	2019.07.PM03	Issue	Moderate	High	The current deliverable review and acceptance process has contributed to project delays and resulted in the acceptance of deliverables that do not meet industry standards.	DataHouse prepares project deliverables and submits to DLIR for review. As DLIR has had limited involvement in project activities or the preparation of deliverables (refer to finding 2019.07.PM02), DLIR does not have an understanding of the purpose of the deliverables or the thought process and factors that were considered in developing the deliverables. This has led to protracted review periods and acceptance of deliverables that do not meet industry standards (refer to finding 2019.07.PM10). A lack of a clear deliverable listing or acceptance criteria (refer to finding 2019.07.PG03), a lack of a quality management process and resource to verify deliverables (refer to finding 2019.07.IT05), and over tasked project managers (refer to finding 2019.07.PM14) also contribute to an ineffective deliverable review and acceptance process. The delay in the approval of deliverables has been cited by the eCMS Project team as one of the reasons the Phase 1 go-live dates were extended. Based on informal IV&V recommendations, DataHouse and DLIR started to implement joint deliverable review meetings beginning June 2019.	2019.07.PM03.R1	Establish deliverable acceptance criteria.	Consider including acceptance criteria in the quality management plan (refer to finding 2019.07.IT05), in a contract amendment (refer to finding 2019.07.PG03), or in Deliverable Expectation Documents (DED).	Open	09/20/19: Accuity has kept the severity rating as Level 2 (Moderate). Although Accuity observed DataHouse and DLIR meetings to review draft deliverables and DLIR has expressed greater satisfaction in the deliverable review and acceptance process, the process to evaluate deliverables against established acceptance criteria has not yet been implemented. Additionally, the impact of deliverables on project schedule, roles and responsibilities, design, migration, etc. is not consistently clear. 10/25/19, 11/22/19, 12/20/19, and 01/24/20: No updates to report. 02/21/20: DataHouse scheduled a deliverable review meeting for the AWS Environment Design document but a meeting of the DataHouse Test Plan was not scheduled. 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. 04/24/20: Accuity increased the severity rating from Level 2 (Moderate) to Level 1 (High) and reopened the 2019.07.PM03.R2 recommendation. DLIR's review and approval of DataHouse's AWS Environment Design document and Test Plan are still pending. Delays in DLIR's review and approval of DataHouse deliverables may cause delays in the completion of the overall project, as was previously experienced. DLIR and DataHouse's evaluation of options for COVID-19 responses should include consideration of DLIR project resources to perform timely deliverable reviews. 05/22/20 and 06/26/20: No updates to report. 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. 08/21/20: DLIR completed their review of DataHouse's AWS Environment Design document. Accuity will continue to evaluate the effectiveness of the deliverable review and acceptance process.		
							2019.07.PM03.R2	Hold joint DLIR and DataHouse deliverable review meetings to walk through deliverables.					
							2019.07.PM03.R3	Implement formal deliverable review and approval processes.	•Include both the scope validation process for acceptance and the quality control process for correctness (refer to finding 2019.07.IT.05). •Include an evaluation of deliverables against acceptance criteria and requirements documentation. •DLIR should understand how each deliverable impacts the project schedule, roles and responsibilities, and ultimately the quality of the technical solution and success of the project.				

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Communication Management	2019.07.PM06	Issue	High	High	DataHouse's ineffective and untimely communications with the DLIR Project Team contributed to DLIR's incomplete understanding of the technical solution, potential risks, and upcoming project activities.	Communication activities listed in the Project Management Plan (version 1.0) did not occur as planned as the weekly project status meetings did not begin until April 2019 and the first progress report was not completed until February 2019. Despite the commencement of regular project communications, misunderstandings and miscommunications between the DataHouse and DLIR project teams continued to occur. DLIR project team members had a piecemeal understanding of the technical solution (refer to finding 2019.07.IT02) and project risks and issues (refer to finding 2019.07.PM09). Additionally, information regarding upcoming project activities was not provided timely. For example, DataHouse did not timely communicate to DLIR what to expect for the design stage sessions (e.g., what would be covered each day, which end users needed to participate). There has also been a lack of communications regarding the upcoming build stage activities (refer to finding 2019.07.PM05). The IV&V recommendations made at 2019.07.PM02.R2 and 2019.07.PM02.R3 regarding DataHouse working on-site and including DLIR in project activities will also address this finding. Below are additional recommendations to further improve project team communications.	2019.07.PM06.R1	Implement daily touch point meetings between DataHouse and DLIR Project Managers.		Open	09/20/19: Accuity decreased the severity rating from Level 1 (High/Critical) to Level 2 (Moderate). The DataHouse and DLIR Project Managers have daily touch points through various methods (in-person meetings, Go To Meetings, email, phone, and text). Furthermore, as noted above at finding 2019.07.PM02, DLIR has been included in more DataHouse meetings including sprint planning, reviews, and retrospectives. 10/25/19: Some improvement of communications were made through DLIR's participation in more Case Management development team meetings and DataHouse's facilitation of DLIR conversations with ETS. Communications regarding upcoming project activities, milestones, and due dates need to be revamped to increase effectiveness (e.g., regular project schedule reports filtered for DLIR resources only and sorting by start dates). 11/22/19, 12/20/19, and 01/24/20: No updates to report. 02/21/20: Accuity increased the severity rating from Level 2 (Moderate) to Level 1 (High) as immediate improvements are needed particularly for Content Management to increase the effectiveness of communications regarding the status of project activities or issues, upcoming due dates, the technical solution, and impacts of decisions or actions. Communications with the Case Management development team have been effective and timely. 03/27/20: The unavailability of DLIR project resources and cancelling of project meetings as a result of COVID-19 impacted communications between DataHouse and DLIR. Additionally, plans to implement new Content Management meetings in March were put on hold due to COVID-19. 04/24/20: Weekly project status meetings and plans for new meetings between DLIR and DataHouse are still on hold. A few project status meetings are tentatively scheduled for May 2020. New methods need to be explored to ensure communications are timely and effective even with limited DLIR project resources. 05/22/20 and 06/26/20: Although the DLIR Project Manager is still reassigned, the DCD Executive Sponsor and the DataHouse Project Manager began holding weekly project status meetings. All other standing meetings are still on hold. 07/29/20: The DLIR Project Manager returned to the project on a part-time basis and is resuming weekly project status meetings. 08/21/20: The DLIR Project Manager returned to full-time status on the project and began resuming more standing DLIR meetings, however, it is unclear when DLIR and DataHouse joint standing meetings will resume. The DLIR Project Manager did schedule some additional meetings between DataHouse and DLIR for critical project areas. Accuity will continue to evaluate the effectiveness of these project communication channels.		

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Communication Management	2019.07.PM07	Risk	Moderate	Moderate	The lack of tailored project communications for all impacted stakeholders may reduce user adoption and stakeholder buy-in.	Communications management is a part of the Project Management Plan developed by DataHouse, however, the plan is not comprehensive and primarily reflects project meetings, status reporting, and issue reporting. The approved Project Management Plan (version 1.2) was updated to include a communication matrix that outlines additional communication activities. While this is an improvement over the previous version, the latest draft plan still does not provide adequate details regarding communication activities as all stakeholders are grouped together for three broad communication methods and activities. A formal communication requirements analysis was not conducted to determine the information needs of internal and external project stakeholders. There is not a process to ensure the timely distribution of project information and there is no dedicated role or adequate resources assigned to communications management (refer to finding 2019.07.PM14). As such, communication activities have occurred haphazardly. The limited communication activities is somewhat mitigated as the DLIR Project Manager involves internal stakeholders in project-related meetings and working sessions. However, this informal approach does not include all internal stakeholders or any external stakeholders.	2019.07.PM07.R1	Further refine communication management plans.	•Segment stakeholders into groups by communication needs such as by department unit (e.g., Hearings, Enforcement, or Records and Claims), by position (e.g., manager, supervisor), or internal and external (e.g., claimants, insurance agencies). •Consider the list of communication methods listed in DataHouse's BAFO. •Due to limited DLIR resources available for communication activities, the specific groups and communication activities should be prioritized to focus resources most efficiently. •Update the project schedule for communication activities and assigned resources (refer to finding 2019.07.PM14).	Open	09/20/19: Accuity decreased the severity rating from Level 2 (Moderate) to Level 3 (Low). DLIR plans to hold two sessions on October 1, 2019 to update the DLIR internal stakeholders (including neighbor island staff) on what has been happening for the last year on the eCMS Project including a brief demo by DataHouse of how the new system will work and look. DLIR also plans to update the DLIR website to include project information that is accessible by internal and external stakeholders. 10/25/19: DLIR held two sessions for internal stakeholders to provide an update on the project progress and timeline. DLIR worked on plans to update the website and draft the carrier newsletter to include project updates. As noted above at finding 2019.07.PM05, the Scrum methodology should be communicated to all stakeholders who will be participating in sprint activities. 11/22/19: Accuity increased the severity rating from Level 3 (Low) to Level 2 (Moderate) as plans to update the website and send out a letter to carriers regarding upcoming changes were not completed as expected. It is important for communications with impacted stakeholders to be executed timely. 12/20/19: The letter to carriers was sent out, however, the website has not yet been launched. There is a lot of opportunity to leverage the eCMS DLIR Core Team members to communicate project updates to internal stakeholders on a more frequent basis, however, the network of core team members should be extended to include neighbor island representatives. 01/24/20: No updates to report. 02/21/20: The project website was launched with high-level background, timeline, and success metrics. DLIR plans to develop videos for project communications. 03/27/20: No updates to report. 04/24/20 and 05/22/20: Project communications with internal stakeholders were an indirect result of DLIR SME participation in project meetings. With a majority of DLIR SMEs unable to participate in project meetings, new methods for communication project updates need to be explored. 06/26/20: DLIR initiated communications with external stakeholders 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. 07/29/20: DLIR made some updates to the project website. 08/21/20: DataHouse and DLIR held an initial meeting with a limited group of external stakeholders and plans to hold periodic update meetings going forward. Accuity will continue to evaluate project communication plans and activities.		

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Organizational Change Management	2019.07.PM08	Risk	Moderate	Moderate	Missing key OCM steps or activities may not identify pockets of resistance or adequately enable individual change.	There is no formal OCM plan or approach. DataHouse's BAFO lists various OCM activities but these were not formalized in a plan or processes. There are no OCM specific tasks or resources assigned for OCM activities in the project schedule (refer to finding 2019.07.PM14). Although there is no formal or coordinated OCM approach, some elements of OCM occur through regular project management communication and training activities. The DLIR Project Manager's inclusive and collaborative approach with internal stakeholders (refer to finding 2019.07.PM01) and the DCD Executive Sponsor's active and visible support of the project (refer to finding 2019.07.PG01) also mitigates the lack of a formal approach. Although projects may progress without a formal OCM approach, industry best practices support that a structured OCM approach compliments project management approaches in increasing probability of project success. Performing activities with an OCM focus will help to better prepare, equip, and support individuals throughout the project and to ensure that the solution is ultimately adopted and embraced by employees.	2019.07.PM08.R1	Develop and implement a structured OCM approach.	•Collect baseline change awareness and readiness measurements through surveys or interviews. •Create and mobilize a change coalition group of managers, supervisors, and key influencers. •Incorporate and align OCM into communication, business process engineering (BPR), and training activities. •Develop OCM activities to address identified awareness gaps or pockets of resistance. •Implement reinforcement mechanisms to support change and increase adoption.	Open	09/20/19: Accuity decreased the severity rating from Level 2 (Moderate) to Level 3 (Low). A number of communication activities are planned to provide awareness of the upcoming project activities including the DLIR internal stakeholder meeting and DLIR website discussed above at finding 2019.07.PM07. 10/25/19: Communication activities were executed or are in progress which help to partially address OCM. ETS has assigned an OCM resource to assist with the eCMS Project. 11/22/19, 12/20/19, and 01/24/20: OCM activities are not executed continually or consistently to keep stakeholders engaged. 02/21/20: 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. 03/27/20: No updates to report. 04/24/20: Accuity increased the severity rating from Level 3 (Low) to Level 2 (Moderate). OCM was occurring indirectly through DLIR SME participation in project meetings, however, almost all DLIR project resources are now unable to participate in project meetings. New OCM methods need to be explored for DLIR SMEs as well as all impacted stakeholders. 05/22/20: No updates to report. 06/26/20: DataHouse plans to draft communications for DLIR to garner external stakeholders support for adopting the new electronic form submittal process. 07/29/20 and 08/21/20: No updates to report. Accuity will continue to evaluate the OCM approach and monitor the change readiness of project stakeholders.		

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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 and 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. DLIR project team was not tracking any of its own risks or issues related to the project. A risk regarding the delay in the completion of the MOU agreement with DHS (refer to finding 2019.07.PM04 and 20109.07.IT01) was never identified and the risk identified in the Content Management Conversion and Migration (version 0.0) document (refer to finding 2019.07.IT.04) was not included in the risks and issues log, indicating an ineffective risk and issue management process. Based on information IV&V recommendations made during the assessment period, both DLIR and DataHouse have communicated a plan to start identifying and logging risks jointly onto DataHouse's log and reviewing them together weekly. As identification and mitigation of risks and issues are critical to project success, a formal process should be implemented before moving forward in the project.	2019.07.PM09.R1	Formalize the Risk and Issue Management process.	•A formalized process should clearly define responsibilities and steps in identification, resolution and action items tracking, and escalation procedures. •The project team must encourage open, transparent discussion about risks and issues.	Open	09/20/19: Accuity decreased the severity rating from Level 1 (High/Critical) to Level 2 (Moderate). A DLIR Risk Manager was assigned in August 2019 and has begun to use mind mapping and a log to identify and document risks. Risks and issues have been included on the agenda for weekly project status and monthly Executive Steering Committee (ESC) meetings. The risk management process needs to be further refined to combine the DataHouse and DLIR logs into one source, assign risk owners, and develop mitigation or remediation plans for each risk or issue. 10/25/19: Risks were discussed at the weekly status meetings and monthly ESC meetings. The DLIR Project Manager and DLIR Risk Manager also meet weekly to review and discuss the risk log. The risk management process improvements noted as of 9/20/19 are still open. 11/22/19, 12/20/19, and 01/24/20: No updates to report. 02/21/20: DLIR began to develop mitigation plans for all high IV&V risks and issues. DLIR plans to meet with DataHouse in March 2020 to continue developing mitigation plans. 03/27/20: Accuity increased the severity rating from Level 2 (Moderate) to Level 1 (High/Critical) and reopened the 2019.07.PM09.R2 recommendation. Discussions of risks were paused as weekly project status and monthly ESC meetings were cancelled from early March. DataHouse and DLIR developed risk mitigation plans and detailed tasks for high risk IV&V findings in early March, however, the timing will need to be reevaluated for COVID-19. Additionally, resuming risk management activities is crucial during periods of significant uncertainty and will help to reduce individual threats and overall project risk exposure. 04/24/20: Discussions of risks at weekly project status and monthly ESC meetings are still on hold. Some of the meetings are tentatively scheduled to resume in May 2020. 05/22/20: Some discussions of risks resumed with weekly project status and monthly ESC meetings, however, 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). 06/26/20: The formalized change request for COVID-19 did not include identification of risks associated with the new plan. Adequate discussions and execution of risk mitigation plans are still not occurring. 07/29/20 and 08/21/20: No updates to report. Accuity will continue to monitor the risk management process.		
							2019.07.PM09.R2	Conduct regular meetings to discuss project risks and issues.	•Include DataHouse and DLIR and, on occasion, the executive steering committee (refer to finding 2019.07.PG02). •Perform a detailed review of new items, status of open items, risk/issue owners, and mitigation plans.				

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Scope and Requirements Management	2019.07.PM10	Issue	High	Moderate	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 (e.g. do not incorporate all contract requirements and all three project phases) and the descriptions in the Requirements Traceability Matrix (RTM) lack sufficient detail. The current RTM also does not link operational and project objectives to design artifacts. Furthermore, the RTM does not include non-functional requirements, including compliance with Hawaii Revised Statues, Hawaii Administrative Rules and security requirements. Requirements management is a part of the Project Management Plan developed by DataHouse, however, the plan is not comprehensive. The Project Management Plan (version 1.2) was updated to include additional details regarding requirements management. While this is an improvement over the previous version, the latest draft plan still does not provide adequate details regarding the requirements prioritization process, the traceability structure, and how requirements will be reported. As requirements are the foundation for proper system design, development, and testing, it is essential that requirements documentation are complete and meet industry standards and best practices. Requirements documentation should be revised and requirements management processes should be improved prior to moving forward in the project.	2019.07.PM10.R1	Revise Content Management and Case management requirements documentation and RTM.	•Ensure requirements follow SMART (specific, measurable, actionable, realistic and time bound) guidelines. •Ensure requirements documentation include all requirements listed in the DataHouse contract, all requirements identified during the stakeholder sessions, and for all three phases of the eCMS Project. •Ensure requirements include functional, performance, process, non-functional, security, and interface requirements.	Open	09/20/19: Accuity decreased the severity rating from Level 1 (High/Critical) to Level 2 (Moderate). The RTM has been updated to include more detailed and specific requirements and user stories from the Case Management and Content Management development teams. DataHouse is in the process of enhancing their RTM to crosswalk and merge all requirements into one master document including all contract requirements. With the staggered development of the Content Management and Case Management solutions and the iterative nature of Scrum methodology, additional requirements will continue to be identified throughout Case Management development which could have implications to Content Management. As noted above at finding 2019.07.PM05, the process for approving and prioritizing requirements still needs to be set. Formalizing the process for managing requirements remains key. 10/25/19: DataHouse provided training to the DLIR Product Owners that included how requirements are managed in the development sprints (refer to 2019.07.PM05) and clarified responsibility for security requirements (refer to 2019.07.IT07). Contract requirements were added to the RTM, however, those requirements were not traced to the requirements subsets used by the development teams for completeness. 11/22/19 and 12/20/19: Case Management requirements are refined through user stories during each sprint. No other significant updates regarding contract, integration, or security requirements to report. 01/24/20: The DataHouse Case Management development team clarified the process for approving new or revised user stories. 02/21/20: The DataHouse Case Management development team continues to spend a lot of time to clarify and refine user stories. The new process for approving Case Management user stories changes was implemented. DLIR plans to procure a resource to help with their review of requirements documentation for completeness. 03/27/20: The Case Management development team continued to make improvements to the process for creating and approving new user stories and the user story tracking tool. DLIR procured a resource to help with their review of requirements documentation for completeness and traceability, however, DLIR did not complete their review of the vendor's results due to COVID-19. 04/24/20 and 05/22/20: DLIR's review of their third-party vendor's requirements assessment results are still pending due to limited project resources. Documentation of requirements (e.g., security, performance, hardware, AWS, acceptance criteria) is still incomplete. 06/26/20: Accuity reopened the 2019.07.PM10.R2 recommendation as IV&V's in-depth review of requirements noted that improvements and clarification of the process are still needed. IV&V's review also reconfirmed that documentation of requirements (e.g., functional, integrations, security, performance, hardware, AWS, acceptance criteria) is still incomplete. Requirements brought up during sprint sessions were not adequately captured and tracked. Requirements processes, roles, and responsibilities should be reevaluated and rediscussed for Phase 2. 07/29/20: IV&V did not observe or have access to information to verify any progress made in the current month. With requirements gathering sessions scheduled for 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. 08/21/20: DataHouse made improvements to the requirements management processes including real time review of updated workflows and drafted user stories during the Phase 2 requirements gathering sessions, as well as timely sharing of draft requirements documentation and meeting notes after sessions for DLIR review and reference. Accuity will continue to evaluate the requirements documentation and processes.		
							2019.07.PM10.R2	Improve requirements management processes.	•Ensure that there is a clear understanding between DataHouse and DLIR regarding who is responsible for identifying and tracking different types of requirements. •Develop a process for prioritizing and reporting requirements. •Develop a process for tracing requirements to specific system design elements.				

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Cost, Schedule and Resource Management	2019.07.PM12	Issue	High	High	Informal cost management practices may lead to unexpected costs or overpayments of contracts.	There is no formal cost management plan. A comprehensive total project budget is not created, tracked, or reported. Currently, payments are tracked for the two main eCMS Project contracts: DataHouse SI contract and the Team Accuity IV&V contract. Other costs for licenses and equipment are tracked informally as these are often paid from DCD's regular or excess funds. With the recent DHS development, costs of all required hardware and software for the alternative solution as well as long-term operational costs need to be properly evaluated and managed (refer to finding 2019.07.IT01). Additionally, total project costs and funding sources are not formally reported. The DataHouse contract states that payments are contingent upon receipt of services, deliverables, and reports in accordance to the milestones that meet the expectations of the RFP. DataHouse provided DLIR with a monthly payment schedule and as of June 30, 2019, DLIR has paid DataHouse's invoices through April 2019 (May and June 2019 invoice payments are still pending). Although the project schedule, deliverable timelines, and go-live dates have been pushed back, no adjustments were made to the monthly payment schedule which could result in overpayments. Due to the lack of clear and specific deliverable expectations (refer to finding 2019.07.PG03), incomplete understanding of all the schedule delays (refer to finding 2019.07.PM13), and undefined criteria for revising the payment schedule, Team Accuity is unable to determine if DataHouse payments are appropriately managed.	2019.07.PM12.R1	Prepare a comprehensive project budget and a schedule of long-term operational costs (e.g., licenses, subscriptions, maintenance, cloud services).		Open	09/20/19: Accuity has kept the severity rating as Level 1 (High) as a comprehensive project budget and long-term cost schedule have not been created yet. Additionally, regular cost variance reports are not prepared or presented. 10/25/19: Progress has been made to gather cost information and set up budget tracking templates. 11/22/19, 12/20/19, and 01/24/20: No updates to report. 02/21/20: DLIR plans to develop a comprehensive project budget while preparing the 2021-2022 budget. 03/27/20: COVID-19 will impact project costs, however, the extent of the impact is indeterminable. Additionally, DLIR is assessing available funding for planned procurements of resources and other project costs. 04/24/20: DLIR is still reviewing recent expenditure restrictions and guidance from the State Governor that may impact project spending, including planned procurements of additional project resources. Evaluation and discussion of the impact of COVID-19 to the DataHouse contract is also needed. 05/22/20: Accuity changed this finding from a risk to an issue as 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 revised milestone completion and payment terms for Phase 2 milestones should be considered as a part of the proposed plan and related change request (refer to findings 2020.03.PM01 and 2019.09.PM01). 06/22/20: The change request for COVID-19 did not include a revision to Phase 1 payments. It did include a new payment schedule for Phase 2 and Phase 3, however, the amount of payments for the planning phase did not appear to align with the percentage of completion associated with those tasks. Phase 3 is not scheduled to begin until July 2021 but a substantial payment is included for June 2020. DataHouse and DLIR are currently discussing the payment schedule. 07/29/20 and 08/21/20: No updates to report. Accuity will continue to monitor project costs including the proposed payment schedule, new AWS costs (from finding 2019.07.IT01), and cost management practices.		
							2019.07.PM12.R2	Prepare regular cost reports for management and the executive steering committee.					
							2019.07.PM12.R3	Clarify DataHouse payment terms and adjust payment schedules for schedule delays.					

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Cost, Schedule and Resource Management	2019.07.PM13	Risk	High	High	Inadequate schedule management practices may lead to project delays, missed project activities, unrealistic schedule forecasts, or unidentified causes for delays.	The Phase 1 go-live dates were delayed a few times since the start of the project with the Content Management go-live delayed five months and the Case Management go-live delayed three months. Reasons for the delay provided by the eCMS Project team included additional time for requirements gathering, some Phase 2 work that was moved up to Phase 1, staff vacations during the holidays, time for the DLIR Project Manager to write the RFP for the IV&V contract, and delayed procurement of the scanners. Although there are reasonable explanations for some of the delays, detailed schedule variance analyses to understand causes and impacts of the delays have not been thoroughly performed, documented, or reported. Decisions or change requests to revise the project schedule are not properly documented or approved in accordance with the Project Management Plan. DataHouse has prepared a higher-level project schedule and a more detailed task listing. Although the project schedule will need to be updated due to the recent DHS development and selection of an alternative solution, the following deficiencies were noted in the current project schedule: * Does not include all project tasks such as Build stage sprints, communication, OCM, BPR, and quality assurance (refer to findings 2019.07.PM05, 2019.07.PM07, 2019.07.PM08, 2019.07.PM11, and 2019.07.IT05). * Does not include estimated durations. Durations are only included in the more detailed task listing. * Only includes tasks for Phase 1. The Phase 2 and 3 tasks are only included in the more detailed task listing. * Specific assigned resources are not identified as only a generic DataHouse or DCD designation is used.	2019.07.PM13.R1	Document and approve revisions to project schedule deliverables, milestones, and go-live dates in accordance with the Project Management Plan.		Open	09/20/19: Accuity has kept the severity rating as Level 1 (High). Although DataHouse updated the project schedule to include additional tasks for Phases 1, 2, and 3 and identified specific resources assigned for select tasks, there are still a number of deficiencies noted. The project schedule is not fully resource loaded, is not integrated with subcontractor's detailed schedules, does not include all DLIR project tasks, estimated hours, or adequately detailed tasks for Phases 2 and 3, and does not retain baseline dates for variance analysis. As a result, Accuity is unable to assess the over-allocation of resources, identify the critical paths, or determine if time estimates or project progress percentages are reasonable. Additionally, regular schedule variance reports are not prepared or presented. 10/25/19: The project schedule was updated with time percentages for some of the tasks, however, the Content Management go-live date is in jeopardy again. The schedule should be updated to include links for predecessor and successor dependencies related to a security management plan (refer to finding 2019.07.IT07). Any DLIR tasks that are necessary for DataHouse tasks should be included in the project schedule and regularly communicated to DLIR (refer to finding 2019.07.PM06). The other schedule management issues noted as of 9/20/19 continue to limit the project's ability to improve project performance and increase adherence to revised timelines. 11/22/19 and 12/20/19: No updates to report. The Content Management go-live date has not yet been adjusted. 01/24/20: The Content Management go-live date was approved by DLIR, however, specific task dates are still pending DLIR approval. 02/21/20: DataHouse added more detailed data conversion tasks to the project schedule. There are already some delays in select integrations and Content Management tasks from the project schedule revised in January 2020. Schedule variance analysis is critical to determine the root cause of delays and to develop effective corrective action plans to prevent further delays. 03/27/20: COVID-19 will impact the current project schedule, however, the extent of the impact is indeterminable. 04/24/20: Some tentative updates were made to project schedule dates but no changes were officially approved. 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. 05/22/20: Specific schedule details should be included as a part of the proposed plan and related change request (refer to findings 2020.03.PM01 and 2019.09.PM01) to ensure the plan is feasible and the path forward is clear. Careful consideration of new tasks related to the proposed plan, dependencies and sequence of new 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. 06/26/20: 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 next rolling two months will help State resources to have a clear understanding of upcoming project activities. This will also provide sufficient lead time for State resources to be able 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. 07/29/20: 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. 08/21/20: A few DataHouse Phase 2 planning tasks are delayed and DLIR Phase 1 lite UAT testing completion was postponed again. With Phase 1 and Phase 2 activities to begin occurring simultaneously, improved schedule management processes are needed to timely coordinate, make schedule adjustments, and minimize further delays within DLIR project resource constraints. Accuity will continue to monitor the project schedule and schedule management practices.		
							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.					

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Cost, Schedule and Resource Management	2019.07.PM14	Issue	Moderate	High	Inadequate assigned project resources may lead to project delays, reduced project performance, or turnover of project resources.	Team Accuity was unable to evaluate resource workloads based on the project schedule information (refer to finding 2019.07.PM13), however, based on observations of the eCMS Project team, the DataHouse and DLIR Project Managers appear to be over-tasked. The DLIR Project Manager is the only full-time DLIR employee assigned to the eCMS Project and understandably does not have time to perform all of the tasks to properly manage the project or represent DLIR during project activities. DLIR should increase participation in design and development activities (refer to finding 2019.07.PM02) but would not be able to with the current assigned resources. Resource management is included in the Project Management Plan and states that "resources will be provided based on project needs. This will be reviewed with DCD on a quarterly basis." The Project Status Reports prepared by DataHouse do not note any resource needs under the Staffing (Needs, Anticipated Changes) section. However, Team Accuity noted that the DataHouse Quality Assurance Lead has not been assigned (refer to finding 2019.07.IT05). DataHouse is also considering adding a project coordinator resource to assist with meeting minutes and getting deliverables out.	2019.07.PM14.R1	Reevaluate project resource needs and acquire additional resources.	•Perform project schedule updates for the alternative solution (refer to finding 2019.07.IT01) and missing tasks (refer to finding 2019.07.PM13). •Ensure resource levels and skill sets align to assigned tasks.	Open	09/20/19: Accuity has kept the severity rating as Level 2 (Moderate). Although two of the eCMS DLIR project team members have been assigned additional responsibilities to lighten the load of the DLIR Project Manager, inadequate resources and the timing of upcoming and critical project activities continue to be a concern. 10/25/19: Resource constraints continue to be a challenge. Focus of DataHouse resources on AWS setup and network logistics delayed completion of the test plans and progress on the configuration management plan. DLIR resources were partially assigned to work on other DLIR IT initiatives which delayed completion of test plans and limited progress on addressing prior IV&V findings. 11/22/19: Accuity increased the severity rating from Level 2 (Moderate) to Level 1 (High) as resource constraints continue to limit improvements made and the pace of the project activities is picking up putting additional demands on the project team. 12/20/19: No updates to report. See finding 2019.09.PM02. 01/24/20: DLIR plans to procure additional resources to support data conversion and testing activities. DataHouse plans to shift some of the technical work from the DataHouse Project Manager to a technical resource to help alleviate the DataHouse Project Manager's workload. 02/21/20: DLIR assigned an additional EDPSO resource to DCD. DLIR is in the process of drafting procurement documents for additional resources for testing, data conversion, AWS, and requirements. 03/27/20: Accuity changed this finding from a risk to an issue as inadequate DLIR resources is causing project delays. Many key DLIR resources and a few DataHouse resources were pulled to help with the higher priority UI Division's operations. Additionally, DLIR's plans to procure necessary project resources for upcoming project activities were put on hold due to COVID-19. The timing of when DLIR project resources will be available again and additional resources procured is unknown. 04/24/20 and 05/22/20: Almost all of the DLIR project resources are still unavailable, including the DLIR Project Manager, and plans to procure additional resources are still on hold. DLIR and DataHouse's evaluation of options for COVID-19 responses should include careful consideration of project resources. 06/26/20 and 07/29/20: DLIR substituted assigned SMEs and DataHouse proposed shifting work in an effort to keep the project moving forward with limited DLIR project resources. A few SMEs were able to participate during the current month 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 UI Division. A detailed plan of 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). 08/21/20: The necessary DLIR SMEs were able to participate in the Phase 2 requirements gathering sessions. With Phase 1 and Phase 2 activities to begin occurring simultaneously, adequate project resources are needed to prevent further delays. Accuity will continue to assess the adequacy of project resources.		
							2019.07.PM14.R2	Prepare regular resource reports for management and the executive steering committee.	•Consider including resource needs for unassigned tasks or roles. •Consider including DLIR resources needed and estimated hours for upcoming project activities (e.g., design sessions, user demonstrations, or user testing).				

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System Software, Hardware and Integrations	2019.07.IT02	Risk	High	Moderate	An unclear interface solution may impact the design process and require additional effort to correct.	The Content Management Design (version 1.0) document was approved by DLIR on May 6, 2019. Case Management is currently in the design phase and design documents have not been provided. Although the Content Management design document was completed and Case Management design is in progress, the exact interface solution has not been defined. The interfaces between Content and Case Management are integral to the success of the project and should be fully defined in design documents in accordance with industry standards. Due to the recent DHS development, the interface options will need to also be researched and analyzed depending on the alternative solution selected. However, even prior to this development, DLIR did not have a clear understanding of the interface solution as well as the complete technical solution. DLIR still had questions about the interface solution regarding the technology, connectivity, batch vs. real-time, security, cost and maintenance of the proposed interface solution between Salesforce and FileNet. The interface solution should be clearly analyzed, documented, mapped to project requirements, and communicated to DLIR.	2019.07.IT02.R1	Document the interface solution and analysis.	Documentation should provide a clear understanding on the interface solution including the following: * How Salesforce will query the selected Content Management solution * How files are uploaded to selected Content Management solution from Salesforce * How metadata is uploaded into Salesforce * Who is responsible for setup, configuration, and maintenance and the steps required for implementation * What are the costs associated for development and long-term maintenance	Open	09/20/19: Accuity decreased the severity rating from Level 1 (High) to Level 2 (Moderate). DataHouse included a narrative about the interface components in the Case Management Design Document. Furthermore, DataHouse organized two demos of 1) the Salesforce application using an interface/API to get to a web service, and 2) another web service using an iFrame and IBM ICN to get to FileNet. 10/25/19: DataHouse refined the interface design details in the Case Management Design Document (version 1.1). 11/22/19, 12/20/19, 01/24/20, 02/21/20, 03/27/20, 04/24/20, and 05/22/20: DataHouse refined details in the integrations specification schedule. Accuity does not have full insight into integration development activities and we are unable to provide a complete update on integration development progress. 06/26/20: Options are being explored to overcome limitations of the Content Management solution to provide the desired user experience integration with the Case Management solution. Open and transparent communication regarding the integration solution and limitations are needed to ensure DLIR fully understands and is made timely aware of any issues. 07/29/20 and 08/21/20: IV&V does not have adequate visibility of integration activities or access to current builds to be able to better assess and identify potential risks and issues. Accuity will continue to evaluate the interface solution as additional details are finalized and as development progress using the actual solution components is made.		
							2019.07.IT02.R2	Update the project schedule to define resources assigned to each of the interface-related activities.					
							2019.07.IT02.R3	Verify the proposed interface solution will work.					
Quality Management and Testing	2019.07.IT05	Risk	Moderate	Moderate	Not having an approved quality management plan and assigned quality assurance resources may impact the quality of project deliverables.	The Quality Management Plan (version 0.1) was drafted by DataHouse on June 23, 2019 but was not yet approved by DLIR. The draft plan did not include quality metrics, quality standards, or quality objectives of the project and does not describe how quality control results will be documented or reported. Additionally, the Quality Assurance Lead identified in DataHouse's BAFO is not assigned to the project team at this time. As it is almost eleven months into the eCMS Project and several deliverables were already approved and many are pending approval, it is important for a quality management plan to be formalized and resources assigned to perform quality management activities.	2019.07.IT05.R1	Finalize the quality management plan.	•DataHouse and DLIR should collaborate and agree on the quality management processes and metrics that will best serve this project. •Include quality standards or reference to specific criteria (refer to finding 2019.07.PM03). •Update the project schedule to assign quality assurance resources (refer to finding 2019.07.PM14).	Open	09/20/19: Accuity has kept the severity rating as Level 2 (Moderate). The DataHouse Project Manager communicated that DataHouse's quality management responsibilities are specific to deliverables and testing. As such, Accuity will work with DLIR to understand what additional quality management activities and metrics need to supplement the DataHouse quality management plan. 10/25/19: DataHouse clarified that the DataHouse Quality Management Plan deliverable does not need DLIR approval as it is not a contract deliverable and is just to communicate the DataHouse approach to quality management to DLIR. The Case Management quality assurance testing was performed for Epic 1. DLIR is working on the DLIR quality management approach. 11/22/19, 12/20/19, 01/24/20, 02/20/20, 03/27/20, and 04/24/20: No updates to report. Accuity does not have access to the project team's testing resources and we are unable to provide an update on testing activities. 05/22/20, 06/26/20, and 07/29/20: There is no independent quality assurance for the eCMS Project as quality assurance testers are a part of the DataHouse and subcontractor teams. DLIR needs to complete their quality management plan to outline how they plan to evaluate and ensure quality throughout the project. 08/21/20: In an effort to prevent further delays for Phase 1 development, DataHouse plans to proceed with development even if DLIR lite UAT testing is not completed by the due date. Without a quality management plan or approach in place, it is unclear how DLIR and DataHouse will ensure quality and user satisfaction if the necessary DLIR project resources do not have the availability to timely complete testing. Accuity will continue to evaluate the quality management plan and activities.		
							2019.07.IT05.R2	Perform quality management activities on previously approved or submitted deliverables.					
Configuration Management	2019.07.IT06	Risk	Moderate	Moderate	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.	A configuration management plan has not yet been drafted. DataHouse plans to prepare a configuration management plan by October 11, 2019. Based on the current project plan, the eCMS Project was supposed to begin the Build stage of Phase 1. Although the recent DHS development will likely delay the start of the Build stage, not having a configuration management plan in place increases the concern that changes may not be properly tested, accepted and approved which may impact system performance or quality.	2019.07.IT06.R1	Develop a formal configuration management plan.	•Ensure the plan is in accordance with IEEE 828-2012 – Standard for Configuration Management in Systems and Software Engineering and includes the configuration management planning process, configuration identification process, configuration change control process, configuration status accounting process, configuration auditing process, interface control process, and release management process. •DataHouse and DLIR should collaborate and agree on the configuration management plan purposes and processes that will best serve this project.	Open	09/20/19: 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 and Case Management development teams, DataHouse is still in the process of finalizing and documenting a configuration management approach. 10/25/19: No updates to report. 11/22/19: DataHouse provided a summary of the configuration management approach for the Case Management development team in addition to the previously provided summary of the Content Management development team's approach. The configuration management approach used by the other development teams (e.g. integrations, AWS/network) is still not clear. Additionally, a comprehensive DataHouse team configuration management plan was not completed. 12/20/19: There was confusion about configuration items and required DLIR approvals due to a lack of a comprehensive configuration management plan. 01/24/20, 02/20/20, 03/27/20, 04/24/20, 05/22/20, 06/26/20, 07/29/20, and 08/21/20: No updates to report. Accuity will continue to evaluate the configuration management plan and approach.		

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Security	2019.07.IT07	Risk	Moderate	High	Not having an approved security management plan in place may impact the security and privacy of the data.	The Security Management Plan (version 0.0) was prepared by DataHouse on June 3, 2019 but was not yet approved by DLIR. Based on the current project plan, the eCMS Project was supposed to begin the Build stage of Phase 1. Although the recent DHS development will likely delay the start of the Build stage, not having a security management plan in place may result in improperly defined security requirements and may preclude the adequacy of the system to support the data needs of the system. Security controls should be defined in the security management plan and implemented as part of an organization-wide process that manages information security and privacy risk.	2019.07.IT07.R1	Ensure the security management plan meets specific standards.	•Consider the industry standards and best practices above. •DataHouse and DLIR should collaborate and agree upon the specific standards that will best serve this project.	Open	09/20/19: Accuity has kept the severity rating as Level 2 (Moderate). The security management plan has not yet been finalized and also needs to be updated to include AWS security plans (from finding 2019.07.IT01). DataHouse plans to complete the security management plan updates in October 2019. 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 the impact that a delay in implementing the plan or controls would have on project activities including data conversion, training, and testing. DataHouse clarified that the submitted Security Management Plan only covers the DataHouse project team. DataHouse also clarified that they are only responsible for application security which they intend to document in an Application Security Management Plan and that DLIR is responsible for network security, security requirements, and security controls. DLIR does not currently have formal security policies but plans to develop policies in early 2020. DLIR also plans to work with ETS to identify minimum security requirements to allow the eCMS Project to progress as the formal policies are developed. Necessary security controls should be decided on and implemented prior to data migration and task dependencies related to security should be identified in the project schedule (refer to finding 2019.07.PM13). DLIR should also consider security controls for system data held by DataHouse. 11/22/19: ETS provided some guidance regarding AWS control tower and cloud security framework considerations. DLIR is working with EDPSO and ETS to identify security requirements and evaluate security design options. 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 unavailability of DLIR project resources. 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. DataHouse is in the process of remediating the findings and plans to complete the remediation in July. 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. Additionally, DataHouse and DLIR agreed on a process for continuing the performance and review of periodic AWS vulnerability scans. DLIR plans to develop high-level timeline and tasks for developing the security management plan in August. 08/21/20: DLIR and ETS are meeting regularly to develop the security management plan including selection of the security tools and framework. DLIR plans to complete the high-level security timeline and tasks in September 2020. Accuity will continue to evaluate the security management plans and documentation as they are finalized.		
							2019.07.IT07.R2	Finalize the security management plan.					

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Project Organization and Management	2020.02.PM01	Positive	N/A	N/A	The DataHouse Case Management development team works very collaboratively with DLIR and demonstrates commitment to continuous improvement resulting in smoother project execution and increased transparency.	The Scrum methodology employed by the DataHouse Case Management development team inherently promotes collaboration, open communication, transparency, and process improvement through built in daily stand-up and retrospective meetings. Over and above this, the Case Management development team members don't just go through the exercise of Scrum meetings but really embrace the spirit of the methodology. The Case Management development team members have: •Worked closely with DLIR subject matter experts (SMEs) to ensure user and business needs are thoroughly understood. •Encouraged DLIR SMEs to really explore opportunities for business process improvements. •Openly communicated solution options including rationale for optimal design considerations, limitations, and benefits as well as ways the solution can help to achieve business process improvements for DLIR. •Listened to feedback from DLIR and timely implemented improvements to project processes (e.g., user story approval process). •Demonstrated genuine commitment to the success of the project. This approach has helped DLIR team members to build a high level of comfort with and understanding of the Case Management solution and has contributed to a smoother execution of the Case Management part of the project.	N/A	N/A for positive findings.	N/A for positive findings.	Closed	N/A	3/27/2020	Closed as this is a positive finding.
System Software, Hardware and Integrations	2019.09.IT01	Positive	N/A	N/A	The DataHouse team's swift and adaptive response to issues and risks minimized impact and further delays to project development.	Many members of the DataHouse team have contributed to the following successes: •Secured a replacement Content Management hosting infrastructure solution. This included presenting the replacement solution, facilitating responses from and meetings with AWS, answering the Office of Enterprise Technology Services (ETS) security questions, and updating design documents. •Mitigated or remediated many of the high severity risks and issues from the IV&V Initial Report. The team's efforts to address many risks and issues are summarized in Appendix D. Additionally, DataHouse's willingness to open project team meetings to both DLIR and IV&V and time taken to address DLIR, IV&V, and ETS concerns have greatly contributed to the progress made since the Initial Report. •Demonstrated commitment to DLIR and project success. This includes the Content Management development team's flexibility in performing project work to accommodate the delays in the WC forms and the Case Management development team's openness to work towards a master RTM to facilitate traceability. Team members have demonstrated their commitment to doing what's best for the project and have even proposed ways to further improve the solution leveraging their extensive technical knowledge and experience. The DataHouse team's actions have helped to minimize impacts and further delays to the project schedule. They have also built positive momentum in moving the project forward.	N/A	N/A for positive findings.	N/A for positive findings.	Closed	N/A	10/25/2019	Closed as this is a positive finding.
Governance Effectiveness	2019.07.PG01	Positive	N/A	N/A	The DCD Executive Sponsor is highly engaged and plays an active and visible role in guiding, monitoring, and championing the eCMS Project.	The DCD Executive Sponsor's close involvement in the project has provided strong leadership that has, to an extent, compensated for the lack of formal governance (refer to finding 2019.07.PG02) and other project deficiencies noted throughout this report. However, as important as good sponsorship is, this factor alone can not be relied upon to guarantee project success.	N/A	N/A for positive findings.	N/A for positive findings.	Closed	N/A	9/20/2019	Closed as this is a positive finding.
Governance Effectiveness	2019.07.PG02	Risk	Moderate	N/A	The lack of a formal executive steering committee and change control board may limit the effectiveness of project governance.	The DataHouse proposal and Project Management Plan (version 1.2) make references to a steering committee, however, a formal committee was not chartered. Currently, the DCD Executive Sponsor is assigned the authority in the Project Management Plan to approve all project changes.	2019.07.PG02.R1	Assemble and formalize an executive steering committee.	•The size and selection of committee members should balance the representation of key stakeholders with the need for efficient decision making. •Formalize the committee mission, responsibilities, and the types and the thresholds of decisions that need committee approval in a steering committee charter. •Consider the need or ease of creating a change control board with a subset of the committee for certain types of decisions.	Closed	09/20/19: Accuity decreased the severity rating from Level 2 (Moderate) to Level 3 (Low). The eCMS Executive Steering Committee (ESC) was assembled and held its first meeting on September 13, 2019. Members were informed of the committee's purpose, roles, and member tasks, however, the types and thresholds of decisions that need committee approval or attention was not formalized. The next meeting is scheduled for October 11, 2019. 10/25/19: The October 11, 2019 ESC meeting was effectively run by the DCD Project Sponsor to discuss key risks and issues and to align the eCMS Project direction with DLIR and ETS strategic objectives. The thresholds for decisions that require committee attention were also established.	10/25/2019	Closed as the eCMS ESC was formalized.
Governance Effectiveness	2019.07.PG03	Risk	Moderate	N/A	The unclear DataHouse contract terms may limit objective evaluation of contractor performance and contract fulfillment.	The procurement of the System Integrator (SI) for the eCMS Project was performed by DLIR EDPSO and reviewed by ETS. The RFP and DataHouse contract does not clearly outline expected deliverables, evaluation criteria for accepting deliverables, and clear delineation of roles and responsibilities. There has already been confusion or misunderstandings due to unclear contract terms in the areas of form design, risk and issue tracking (refer to finding 2019.07.PM09), requirements tracking (refer to finding 2019.07.PM10), and communications (refer to finding 2019.07.PM07). Additionally, the lack of specific acceptance criteria has led to approval of deliverables that do not meet industry standards (refer to finding 2019.07.PM.03). DataHouse has already prepared certain management plans and project documents and has been amenable to providing certain additional deliverables even though they were not clearly required to by the RFP or contract. Clear contract terms set expectations for deliverables and will assist DLIR to ensure that contractors fulfill obligations to the standard of quality that is required.	2019.07.PG03.R1	Evaluate the need for a contract modification to clarify contract terms.	•Consider including key project documents as deliverables such as a requirements management plan and requirements traceability matrix (RTM) (refer to finding 2019.07.PM10), risk and issue log (refer to finding 2019.07.PM09), and testing documentation. •Consider including acceptance criteria based on industry standards. For example, the acceptance criteria could be compliance with Institute of Electrical and Electronics Engineers (IEEE) 29148-2018 for a requirements traceability matrix or compliance with IEEE 829 for test documentation. •Consider including measurable success metrics (refer to finding 2019.07.PG05). •Consider the need to outline roles and responsibilities between DLIR and DataHouse (refer to finding 2019.07.PM02).	Closed	09/20/19: DLIR has decided to address this finding through updates of project plans. DataHouse has shown an openness to develop and continuously improve project deliverables including project plans. Roles and responsibilities have been more openly discussed and plan to be incorporated within project plans. Furthermore, success and quality metrics are being drafted which will also be an additional method for evaluating contractor performance and fulfillment.	9/20/2019	Closed as DLIR will address through project plan updates. The need for clarification of roles and responsibilities as well as acceptance criteria and success metrics will continue to be monitored under the 2019.07.PG04 Success Metrics, 2019.07.PM02 Project Organization, 2019.07.PM03 Deliverable Review, and 2019.07.IT05 Quality Management findings.

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Governance Effectiveness	2019.07.PG04	Risk	Low	N/A	The lack of guidelines, checklists, and shared project assets may reduce project performance and efficiency.	Large IT projects are not a regular occurrence for many State departments. Often times project resources are assigned from within the departments that have valuable organizational and operational knowledge but do not have the necessary project management experience. Having guidelines and checklists and access to project documents from past State projects would greatly benefit even experienced project teams. ETS, as the State of Hawaii's IT oversight office, is in the best position to gather project assets and put forth guidelines.	2019.07.PG04.R1	Initiate conversations with ETS to discuss DLIR IT and project support needs and responsibilities.	•Discuss what resources, guidance, and shared project assets would be most helpful to DLIR. •Discuss what project assets DLIR can provide to contribute to the development of a centralized project management library. •Consider involving the project steering committee to align and clarify ETS vs. steering committee governing roles.	Closed	09/20/19: ETS began sharing best practices and lessons learned with DLIR including taking the DLIR Project Manager to sprint meetings for another State project. ETS is a member of the newly formed eCMS Executive Steering Committee (ESC) and will use that vehicle to share lessons learned with DLIR. Additionally, DLIR is forming a DLIR IT Steering Committee to provide oversight to all DLIR IT projects. The DCD Executive Sponsor is a member of that DLIR committee and plans to share eCMS lessons learned and project templates with other DLIR IT projects.	9/20/2019	Closed as discussions occurred with ETS and the risk is adequately mitigated with the planned course of action.
Benefits Realization	2019.07.PG06	Risk	Low	N/A	Failure to align statutes with the eCMS Project modernization objectives may reduce the operational improvements that are achieved.	The eCMS Project's primary modernization objective is to move to a paperless and automated business process. The new system is being designed to allow for electronic filing, routing, and tracking of forms. However, current disability compensation statutes have not been revised to require that these forms are filed electronically by law. As such, manual paper forms may continue to be submitted by external users such as claimants, employers, and insurance companies. As the development of a portal for public filing will not begin until Phase 3, this risk is not as imminent. However, as the evaluation of potential impacts, collection of feedback from stakeholders, and the legislative process to amend statutes is a long process, the initial planning should begin as early as possible so as not to postpone or reduce the realization of the benefits from the new system.	2019.07.PG06.R1	Develop a plan and timeline to amend the statutes to align to project and organizational objectives.		Closed	09/20/19: In 2016, DLIR convened a Working Group (WG) consisting of representatives from various DCD-related stakeholder groups. The WG provides an avenue for DLIR to understand stakeholders' concerns and a forum for the stakeholders to understand the DLIR's business process improvements including the need for statutorily mandated electronic claim filings. DLIR plans to draft statutory changes to mandate electronic filing in FY2022 (effective July 1, 2023). This timeframe was decided on as it allows DLIR to proactively involve stakeholders in testing production and provide stakeholders the appropriate time to ready their systems for electronic filing.	9/20/2019	Closed as DLIR has a plan to align statutes with eCMS Project objectives.
Project Organization and Management	2019.07.PM01	Positive	N/A	N/A	The DLIR Project Manager is a dedicated project lead who works collaboratively with internal stakeholders.	The DLIR Project Manager is hardworking and has continually demonstrated dedication to the project and an eagerness to learn. Additionally, the DLIR Project Manager has some of the necessary leadership qualities that make her a good project manager. Her positive nature and collaborative approach develops trust with and satisfies concerns of many internal stakeholders. This has mitigated some of the communication and OCM risks (refer to findings 2019.07.PM07 and 2019.07.PM08). However, the DLIR Project Manager is the only full-time DLIR employee assigned to the eCMS Project and there is not a sufficient amount of project resources (refer to finding 2019.07.PM14) to properly manage the project.	N/A	N/A for positive findings.	N/A for positive findings.	Closed	N/A	9/20/2019	Closed as this is a positive finding.
Project Organization and Management	2019.07.PM04	Issue	High	N/A	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 to lead the discussions due to her experience with DHS.	The DataHouse BAFO proposed a technical solution that planned to leverage DHS's IBM FileNet environment, however, there was no written agreement between DataHouse and DHS that supported DHS intent to support shared services. Once the eCMS Project was underway, the MOU discussions with DHS were primarily led by the DataHouse Project Sponsor. The eCMS Project advanced for 10 months without finalizing the MOU between DHS and DLIR. As the proposed solution is no longer viable due to the recent DHS development, an alternative solution must be determined (refer to finding 2019.07.IT01) and previously accepted or drafted deliverables may need to be updated. Although the eCMS Project will not be able to utilize DHS's IBM FileNet environment, the project still plans to leverage DHS's enterprise licenses for FileNet and Datacap. Before moving forward in the project, DLIR should finalize all necessary agreements to ensure that the alternative solution is viable and prevent further delays.	2019.07.PM04.R1	Finalize the MOU to leverage DHS's enterprise licenses for FileNet and Datacap.		Closed	09/20/19: The MOU with DHS for Datacap and FileNet licenses is close to being finalized. DLIR received a draft from DHS on September 1, 2019 and it was sent to the Attorney General's office on September 17, 2019. Accuity has observed that DLIR has led the contract discussions and negotiations with AWS.	9/20/2019	Closed as the MOU with DHS is in process to be finalized and DLIR is leading contractor negotiations. The recommendation to identify all critical tasks will continue to be monitored under the 2019.07.PM13 Schedule Management finding.
							2019.07.PM04.R2	DLIR should lead all discussions and negotiations of vendor contracts or agency agreements.					
							2019.07.PM04.R3	Identify and complete all critical tasks prior to moving forward with an alternative solution.					
Project Organization and Management	2019.07.PM05	Risk	Moderate	N/A	A lack of clarity on DataHouse's development methodology may not allow or adequately prepare stakeholders to participate readily.	DataHouse is using a modified Agile development methodology that is referred to as "Water-Scrum-Fall". This is a combination of the waterfall and Agile methods that defines the full set of requirements at the beginning but uses Agile user stories and sprints while building the software. Based on the current project plan, the eCMS Project was supposed to begin the Build stage of Phase 1 and transition to the Scrum methodology. Although the recent DHS development will likely delay the kickoff of this stage, there are a number of concerns regarding the transition to the Scrum methodology: •DataHouse has not yet fully determined the number, length, and details of the sprints. •The project schedule also does not yet reflect the agile sprints cycles or identify resources who are expected to participate. •There have not been communications with the DLIR project team and stakeholders regarding the Scrum methodology or the roles and responsibilities they have during this stage of the project. •Many of the DataHouse project team members work remotely and are unable to work on-site.	2019.07.PM05.R1	Formalize an approach for executing Scrum phases.	•Consider industry best practices for Agile methodologies such as retrospectives, daily standups, burndown charts, and frequent user demonstrations and feedback. •Establish the backlog preparation and refinement process. •Establish virtual conferencing tools and communication protocols for geographically distributed team members. •Set the number and length of the sprints. •Update the project schedule for sprint activities and assign resources (refer to finding 2019.07.PM14). •Include clear and detailed procedures and roles and responsibilities for Scrum tasks (refer to finding 2019.07.PM02). •DLIR should be included in project team activities (refer to finding 2019.07.PM02).	Closed	09/20/19: Accuity has kept the severity rating as Level 2 (Moderate). Although DataHouse has incorporated the Case Management sprint schedule into the overall project schedule and provided a high-level overview of the requirements/user stories to be covered by each sprint, roles and responsibilities still need to be clearly defined and communicated. The Case Management development team follows a classic Scrum model and plans to clarify roles and responsibilities of Product Owners and users, how new requirements will be approved and prioritized, and acceptance criteria during the next user review and Epic 2. The Content Management development team follows a semi-agile process and drafted an overview document of the team's change management practices. 10/25/19: The Case Management development team held a training for the DLIR Product Owners to provide an overview of the Scrum methodology and the Product Owner role and responsibilities.	10/25/2019	Closed as the Scrum methodology has been formalized and was communicated to the DLIR eCMS Product Owners. The recommendation to communicate the methodology to all impacted stakeholders will continue to be monitored under the 2019.07.PM07 Stakeholder Communications finding.
							2019.07.PM05.R2	Communicate the approach for executing Scrum phases to all team members and impacted stakeholders.					

ASSESSMENT CATEGORY	FINDING ID	TYPE	ORIGINAL SEVERITY	CURRENT SEVERITY	FINDING	ANALYSIS	RECOMMENDATION ID	RECOMMENDATION	SUPPLEMENTAL RECOMMENDATION	FINDING STATUS	FINDING STATUS UPDATE	CLOSED DATE	CLOSURE REASON
Business Process Reengineering	2019.07.PM11	Risk	Moderate	N/A	Not identifying and addressing BPR opportunities prior to system design and development may require additional effort to correct.	There is no formal plan for BPR activities. DataHouse's approach to BPR was to start with the current state process maps, walkthrough the process with stakeholders, and make updates to the processes maps. As a result of this process, DataHouse provided future state process maps. However, Team Accuity was unable to clearly understand how processes were prioritized for change, root causes were addressed, or processes were improved (e.g., elimination of rework loops). Business process improvement is a key deliverable identified in the RFP and in DataHouse's contract. The DataHouse contract states that the key deliverable will be manifested through: faster throughput of data into the system; faster response times to requests by users, less errors reported in the system; greater flexibility to make system changes; and online access and input by internal and external users. However, the RFP and contract do not clearly identify how this deliverable will be supported, evaluated, or accepted by DLIR (refer to finding 2019.07.PG03). There should be clear documentation on how the new solution plans on measuring and achieving key business process improvement performance goals. The IV&V recommendations made at 2019.07.PG05.R1, 2019.07.PG05.R2, and 2019.07.PG05.R3 regarding clear and measurable goals and success metrics will also address this finding. Below is an additional recommendation to further improve BPR activities.	2019.07.PM11.R1	Identify and track BPR opportunities in a log.	This log should be used to plan BPR and design activities and to develop content for communications and training.	Closed	09/20/19: Accuity has kept the severity rating as Level 2 (Moderate) as a process or tool for tracking BPR changes for future communications and training has not been created. 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.	12/20/2019	Closed as user stories resulting in significant BPR can be identified for communications and training.
System Software, Hardware and Integrations	2019.07.IT01	Issue	High	N/A	The original solution proposed by DataHouse in their BAFO to leverage the existing DHS FileNet hosting infrastructure is no longer a feasible solution.	There are a number of items in the DataHouse BAFO that are no longer feasible based on the inability to leverage the existing DHS FileNet environment. Under the original solution, DHS would monitor and maintain the enterprise IBM FileNet environment. As DHS will no longer be providing access to their IBM FileNet environment, DLIR will need to identify resources to take on the monitoring and maintenance of the IBM FileNet infrastructure. As DataHouse recommended in the BAFO the on-premise installation for the IBM ECM solution due to the capture volume and higher performance of document file transfers over the LAN and internal State network, DLIR should be provided with a technical analysis of various solution options that includes a comparison of the alternatives on performance. Although this issue relates to the proposed hosting infrastructure solution for Content Management, this is an opportunity for both DataHouse and DLIR to reassess the total solution considering all updated technological opportunities available today. DLIR should ensure that DataHouse performs sufficient analysis regarding possible alternative solution options. DLIR should also take the time to perform adequate due diligence before making any decisions. It is important that thorough analysis and adequate due diligence is performed before moving forward in the project in order to avoid further project delays and to ensure that the delivered system will meet operational and stakeholder requirements.	2019.07.IT01.R1	Evaluate other total solution alternatives for an alternative solution.	•Consider solutions that could include other technical applications that could utilize a different choice of methodology using different tools, provide a cheaper solution for the longer-term, and faster implementation. •Consider the following website which lists 20 competitive alternatives to IBM FileNet for consideration: www.g2.com/products/ibm-filenet-content-manager/competitors/alternatives. Additional research could result in more extensive choices going forward.	Closed	09/20/19: In July 2019, DataHouse presented AWS as a potential alternative solution. The proposed AWS solution was compared to another cloud solution, Microsoft Azure, in respects to cost and performance. DataHouse reviewed the listing of content management solutions provided by Accuity and concluded that IBM FileNet was the best solution for this project, however, no formal analysis was prepared. DLIR approved AWS as the replacement hosting infrastructure solution effectively remediating the inability to leverage the DHS FileNet environment issue. 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 with the selection based on reading of AWS whitepapers, the information provided by DataHouse, and discussions with ETS and EDPSO.	9/20/2019	Closed as a replacement solution 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.
							2019.07.IT01.R2	Prepare a comprehensive technical analysis of the alternative solution.	•Include the impact of the alternative solution to project cost, schedule, resources, security, maintenance and operations, system software, hardware integration requirements, performance requirements, and required infrastructure to ensure a complete and successful working solution. •Clearly define what needs to be completed, who is responsible, steps for completion, and timing. •Considerations for impact on project cost includes costs related to the following: * Processing, storage and connectivity * Operating system and database management licensing * Interfacing technologies * Maintenance and operations * Data center, collocation facilities and availability requirements * If it is decided that FileNet is the most cost effective and efficient solution, renewal and ongoing costs of FileNet enterprise licensing •Considerations for impact on project schedule, time estimates, and resources include: * Acquisition, installation, and configuration of software and infrastructure * Ongoing maintenance and operations (patching, updates) * Performance of security assessments * Change and configuration management				
Design	2019.07.IT03	Issue	High	N/A	The Content Management design documents were based on incomplete, inaccurate, and outdated requirements.	Case Management is currently in the design phase and design documents have not been provided. The Content Management Design (version 1.0) approved by DLIR on May 6, 2019. The recent DHS development will require design documents to be updated after an alternative Content Management hosting infrastructure solution is selected. However, even prior to this development, the Content Management design documents were drafted based on requirements documentation that is incomplete (refer to finding 2019.07.PM10). The requirements document deficiencies should be remediated immediately and the design documents updated accordingly.	2019.07.IT03.R1	Update the Content Management design documents.	Consider updates for revised requirements documents (refer to finding 2019.07.PM10) and for the alternative Content Management hosting infrastructure solution (refer to finding 2019.07.IT01).	Closed	09/20/19: Accuity decreased the severity rating from Level 1 (High) to Level 2 (Moderate). DataHouse updated the Content Management Design Document to include additional, more detailed requirements. As noted above at finding 2019.07.PM10, DataHouse is in the process of updating the requirements documentation to include all requirements from the DataHouse contract. 10/20/19: The Content Management Design Document (version 1.2) was updated to refine or add requirements.	10/25/2019	Closed as the Content Management design documents are regularly updated as changes to requirements are made. The completeness of the design with respect to contract requirements will continue to be monitored under the 2017.07.PM10 requirements finding.
Data Conversion	2019.07.IT04	Risk	Moderate	N/A	A Content Management data conversion plan that is based on incomplete, inaccurate, and outdated requirements may impact the data migration design process and require additional effort to correct.	Case Management is currently in the design phase and data conversion documents have not be drafted. The Content Management Conversion and Migration (version 0.0) document was drafted by DataHouse on June 13, 2019 but was not yet approved by DLIR. The document was drafted based on requirements documentation that is incomplete (refer to finding 2019.07.PM10). Furthermore, the Content Management Conversion and Migration (version 0.0) document included a risk that changes to the requirements after a certain point in the project may cause additional effort to re-factor the migration design process. As data conversion is the process of converting data from one source to suit the system requirements of another, it is important that the data conversion plan is based on accurate system requirements. The requirements document deficiencies (refer to finding 2019.07.PM10) should be remediated immediately and the data conversion plan updated accordingly.	2019.07.IT04.R1	Update the Content Management data conversion plan.	Consider updates for revised requirements documents (refer to finding 2019.07.PM10).	Closed	09/20/19: Accuity has kept the severity rating as Level 2 (Moderate). The Content Management Conversion and Migration Plan (version 1.1) was updated on 09/05/19 before the Content Management Design Document (version 1.1) was updated on 09/15/19 to include additional design requirements. Changes to requirements should be evaluated for the impacts on the conversion and migration plans and the detailed taxonomy mapping. 10/25/19: DataHouse evaluated the new requirements and determined that there is no impact to the high level Content Management conversion requirements included in the Conversion and Migration Plan. 11/22/19: Accuity reviewed the taxonomy mapping with the primary stakeholder and confirmed that changes in system requirements will not have a significant impact on the Content Management data conversion plan as the legacy system has limited data fields that are currently used.	11/22/2019	Closed as changes in system requirements do not appear to significantly impact the Content Management data conversion plan.

Appendix E: Prior IV&V Reports

AS OF DATE	DESCRIPTION
06/30/19	Initial On-Site IV&V Review Report
09/20/19	Monthly On-Site IV&V Review Report
10/25/19	Monthly On-Site IV&V Review Report
11/22/19	Monthly On-Site IV&V Review Report
12/20/19	Monthly On-Site IV&V Review Report
01/24/20	Monthly On-Site IV&V Review Report
02/20/20	Monthly On-Site IV&V Review Report
03/27/20	Monthly On-Site IV&V Review Report
04/24/20	Monthly On-Site IV&V Review Report
05/22/20	Monthly On-Site IV&V Review Report
06/26/20	Monthly On-Site IV&V Review Report
07/29/20	Monthly On-Site IV&V Review Report

Appendix F: Comment Log on Draft Report

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DLIR DCD eCMS Project: IV&V Document Comment Log				
ID #	**Page #**	**Comment**	**Commenter's Organization**	**Accuity Resolution**
1	Pg 9 and Appendix D	Reviewing of original contract requirements during requirements gathering sessions were already a part of the requirements process used in Phase 1.	DataHouse	Accuity updated page 9 to replace "reviewing original contract requirements" with "action item lists". Page 5 and Appendix D also updated accordingly.
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