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December 3, 2021

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

The Honorable Scott K. Saiki,
Speaker, and
Members of The House of Representatives
Thirty-First 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 (Dec 9, 2021 10:27 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

October 26, 2021 | Version 1.0

REPORT FINALIZED

November 30, 2021

ACCUITY

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 11

Appendix A: IV&V Criticality and Severity Ratings 14

Appendix B: Industry Standards and Best Practices 16

Appendix C: Interviews, Meetings, and Documents 19

Appendix D: Prior Findings Log 24

Appendix E: Prior IV&V Reports 43

Appendix F: Comment Log on Draft Report 45

Document History

DATE	DESCRIPTION	AUTHOR	VERSION
11/05/21	Monthly On-site IV&V Review Report Draft created	Julia Okinaka	0.0
11/30/21	Monthly On-site IV&V Review Report Final updated for corrections of documents in Appendix C and to reflect no comments 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 focus of our IV&V activities for this report included the completion of a two-month assessment of resource management, training and knowledge transfer, and security and the beginning of a two-month assessment of project organization and management, system hardware, and data conversion. IV&V has areas of limited visibility or access to project activities and documentation that may prevent a complete identification of project risks.

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 October 26, 2021. 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.

PROJECT CHALLENGES

"Nothing is impossible, the word itself says 'I'm possible'!"

-Audrey Hepburn

PROJECT ASSESSMENT

AS OF OCTOBER 26, 2021

SUMMARY RATINGS

OVERALL RATING

Y

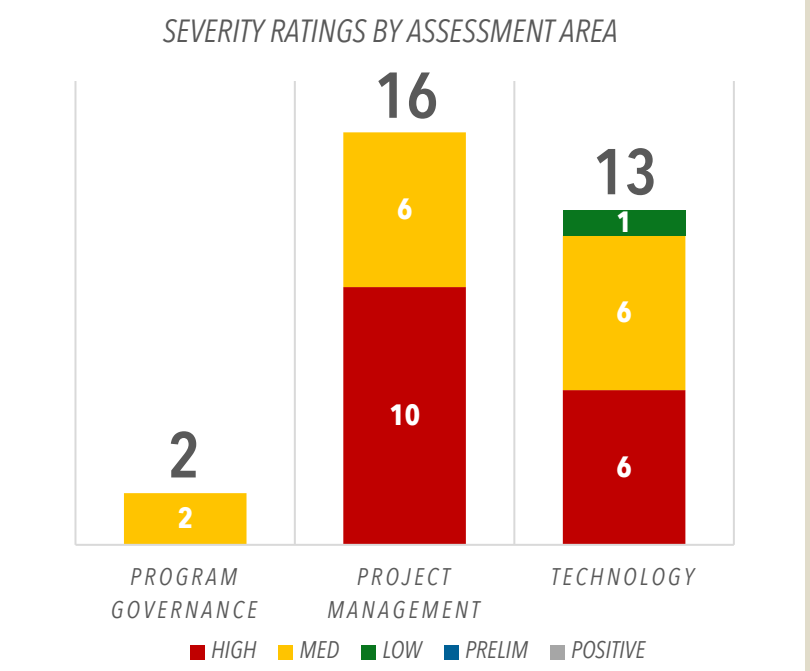
Deficiencies were observed that merit attention and remediation in a timely manner.

PROGRAM GOVERNANCE	Y
PROJECT MANAGEMENT	Y
TECHNOLOGY	R

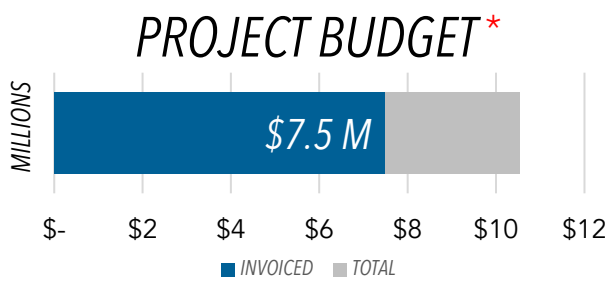
CRITICALITY RATINGS

R	Y	G	NA
HIGH	MEDIUM	LOW	N/A

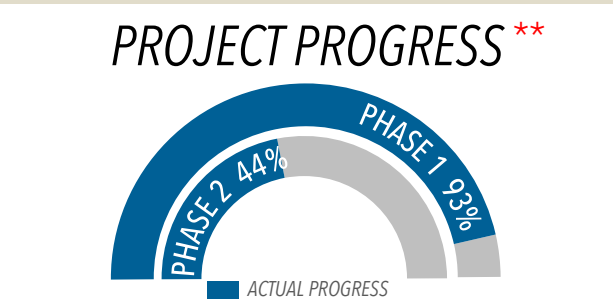
31 OPEN FINDINGS



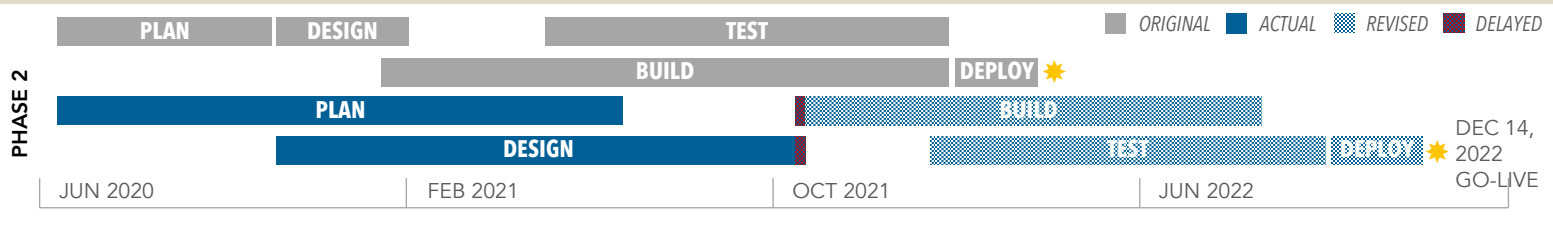
49 OPEN RECOMMENDATIONS

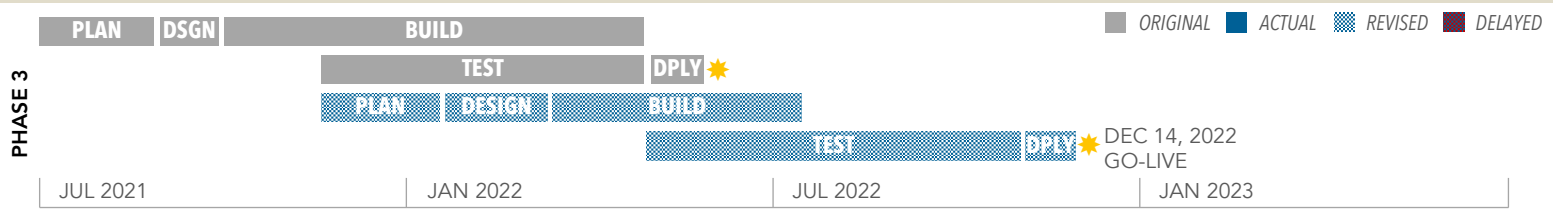


* Only includes contracts. IV&V unable to validate total budget.



** As of 10/21/21. IV&V unable to verify %.





ASSESSMENT AREA & RATINGS SUMMARY

AS OF OCTOBER 26, 2021

AUG	SEP	OCT	IV&V ASSESSMENT AREA	IV&V OBSERVATIONS
R	R	Y	Overall	The eCMS Project made progress in many areas of the project. Continuous improvements in project processes are critical to maintain current momentum and stay on track with the aggressive timelines. *Project Schedule:* Phase 1 Case Management, Phase 2, and Phase 3 are generally on track to the new project schedule. There are some delays for Phase 1 Content Management tasks but it is unclear what the impact to the December 2021 go-live is. Accuity is unable to fully assess schedule variances (refer to finding 2019.07.PM13). *Project Costs:* Contract costs are within the total contract amounts; however, DataHouse is prepaid for Phase 1 and 2. DataHouse is adjusting Phase 3 invoices under the new payment schedule to make corrections for Phase 1 and 2 amounts. Accuity is unable to fully assess cost variances (refer to finding 2019.07.PM12). *Quality:* Quality metrics are not yet defined or measured (refer to finding 2019.07.IT05). The definition of quality metrics and a reevaluation of success metrics are critical for setting the project direction forward.
Y	Y	Y	Program Governance	The eCMS Project Executive Steering Committee (ESC) convened for the monthly meeting to discuss major risks and issues, reviewed DataHouse's revised payment schedules, and approved the new project timelines. Additional guidance and active involvement from project governance are critical for driving progress, removing barriers, and reassessing overall project priorities and goals.
R	R	Y	Project Management	DLIR and DataHouse made progress in many project management areas including revising payment schedules, approving pending deliverables, clarifying Phase 1 Content Management requirements, updating the detailed project schedule, adding additional Phase 2 tasks, deciding on a key Content Management business process, and providing tester training. Although the project schedule was re-baselined with ESC approval of the revised timelines, there are already some delays in a few tasks that could impact one of the go-live dates. With significant delays experienced on the project to-date and with such an aggressive project pace going forward, it is critical for DLIR and DataHouse to continually reassess and timely adjust foundational project management processes (refer to Appendix D: Prior Findings Log). Prioritization of tasks, fluid collaboration, transparent dialogue, swift risk and issue resolution, and careful coordination of limited resources are key.
R	R	R	Technology	DataHouse held a demo of the replacement Content Management solution; however, DLIR and DataHouse are currently working to address connectivity issues. Due to the current technical issues, training sessions were delayed but it is unclear what the impact will be to the upcoming user acceptance testing (UAT) or the December 2021 go-live. Phase 1 Case Management data validation testing is mostly complete with DLIR and DataHouse working to address the remaining issues. DLIR is reviewing DataHouse's Phase 2 design deliverable and compiling user feedback. DataHouse also provided an updated vulnerability scan report that DLIR conditionally accepted and approved as the configuration baseline. Improvements are needed for many foundational technology processes (refer to Appendix D: Prior Findings Log). IV&V does not have adequate visibility of DataHouse development, testing, and data conversion activities.

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. Four IV&V Assessment Categories improved from the prior report. The overall rating reflects the progress made in many areas of the project and that the project is generally on track with the re-baselined project schedule. There are some technical issues and delays for Content Management that could impact go-live. Continuous improvements in project processes are critical to maintain current momentum and stay on track with the aggressive timelines.

AT-A-GLANCE

ESC approved **NEW TIMELINES**

TECHNICAL ISSUES for Content Management

Focus on **PRIORITIZED** tasks and issues

CONTINUOUS reassessment and adjustment

AUG	SEP	OCT	PROGRAM GOVERNANCE
Y	Y	Y	Governance Effectiveness
Y	Y	Y	Benefits Realization

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

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

PROGRAM GOVERNANCE

Governance Effectiveness

Benefits Realization

PROGRAM GOVERNANCE

AUG	SEP	OCT	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
↑	↑	↑	Governance Effectiveness	The eCMS Project Executive Steering Committee (ESC) convened for the monthly meeting to discuss major risks and issues, reviewed DataHouse's revised payment schedules, and approved the new project timelines. It is critical for project governance to be actively involved (2021.05.PG01) throughout the execution of the new aggressive timeline. Project governance plays a critical role to drive progress, remove barriers, provide guidance, and maintain accountability.	0	1	0
↓	↓	↓	Benefits Realization	No significant updates since the prior report. Project success metrics should be reevaluated to take into consideration the current project status and to focus on what can be realistically achieved in the remaining project timeline. DLIR also 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

PROJECT MANAGEMENT

AUG	SEP	OCT	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
R	R	R	Project Organization and Management	DLIR and DataHouse made progress in many project management areas including approving pending deliverables (2019.07.PM03) and clarifying change requests (2019.09.PM01). However, continuous reassessment and timely adjustment of foundational project management processes (refer to Appendix D: Prior Findings Log) (2020.07.PM01) are critical to maintain current momentum and stay on track with the aggressive timelines. Fluid collaboration, transparent dialogue (2019.07.PM02), prioritization of tasks, and careful coordination of resources (2019.07.PM13) are needed to effectively execute all three phases simultaneously.	0	4	0
R	R	R	Scope and Requirements Management	DataHouse and DLIR clarified Phase 1 Content Management requirements in an updated deliverable. Improvements in requirement traceability (2019.10.PM01) and requirements management processes (2019.07.PM10) are needed as it is still unclear how new or clarified requirements raised throughout the project are captured and tracked. Additionally, with the aggressive timeline, careful management of requirements is needed to ensure that there is not a reduction in scope without a process for prioritizing and approving changes.	0	2	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

AUG	SEP	OCT	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
R	R	Y	Cost, Schedule, and Resource Management	DataHouse updated the detailed project schedule for the ESC approved timelines and additional Phase 2 tasks. Phase 1 Case Management, Phase 2, and Phase 3 are generally on track with the new project schedule. Phase 1 Content Management training sessions were delayed due to technical issues and it is unclear what the impact will be to the upcoming UAT or the December 2021 go-live. With significant delays experienced on the project to-date and with such an aggressive project pace going forward, additional improvements in how the project schedule is monitored, adjusted, and mitigated (2019.07.PM13) are needed. Continuous assessment and adjustment of resource management strategies are required to help limited DLIR project resources focus on and timely complete critical tasks to achieve the aggressive timeline. Careful coordination of resources (2019.09.PM02) and prioritization of tasks (2019.07.PM13) are key. Additional resources (2019.07.PM14), including DLIR area leads, would also help to manage various workstreams and concurrent execution of all three phases. DataHouse is prepaid for Phase 1 and 2; however, the ESC reviewed DataHouse's revised payment schedules and DataHouse is adjusting Phase 3 invoices under the new payment schedule to make corrections for Phase 1 and 2 amounts. Improvements in cost management processes (2019.07.PM12) are needed to track and monitor other project costs.	0	4	0
Y	Y	Y	Risk Management	DLIR and DataHouse continue to develop some risk mitigation plans for the highest priority risks. With the aggressive timeline, it is critical for DLIR and DataHouse to improve risk management processes (2019.07.PM09) so that risks and issues are proactively identified and swiftly mitigated.	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

AUG	SEP	OCT	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
			Communications Management	Additional communications and project updates were provided for DLIR project team members. DLIR is also preparing for a divisional meeting to provide project updates for internal DCD stakeholders. Open and transparent dialogue between all DLIR and DataHouse project team members (2019.07.PM06) and timely communications with all impacted stakeholders (2019.07.PM07) are critical for smooth project execution.	0	2	0
			Organizational Change Management (OCM)	DLIR continues to hold supplemental working sessions and trainings to help DLIR project team members prepare for and participate in project activities. DLIR needs to further develop the OCM plans and approach (2019.07.PM08) to increase stakeholder engagement, collect periodic readiness data, and reinforce changes related to the upcoming Content Management go-live.	0	1	0
			Business Process Reengineering (BPR)	DLIR reached a decision on a critical Content Management BPR opportunity but needs to further clarify the related business processes for the upcoming go-live (2020.12.PM01). DLIR also began to track some BPR opportunities in a log. Additional discussion, prioritization, and analysis of these opportunities are needed (2021.08.PM01).	0	2	0
			Training and Knowledge Transfer	Phase 1 Content Management training was postponed to November 2021 due to technical issues. DLIR provided training for testers on how to perform UAT and started to build a training resource page for internal users. DataHouse continued to update Phase 1 Content Management and Case Management training materials based on feedback submitted by DLIR.	0	0	0

TECHNOLOGY

AUG	SEP	OCT	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
R	R	R	System Software, Hardware, and Integrations	DataHouse held a demo of the replacement Content Management solution; however, DLIR and DataHouse are currently working to address connectivity issues. It is unclear what the impact of this technical issue will be to the December 2021 go-live. A solution analysis (2021.03.IT01) will not be prepared to formally document how the replacement Content Management system will address gaps in the prior solution; however, DataHouse did update the related design deliverable to document how some of the previous solution UAT feedback and issues will be addressed. Additionally, a meeting was scheduled for late October 2021 to discuss how technical issues from the prior solution will also be addressed by the replacement solution. With the December 2021 Phase 1 Content Management go-live quickly approaching, it is critical for go/no-go criteria (2020.09.IT01), interface solution (2019.07.IT02), and M&O roles and responsibilities (2019.09.IT02) to be clarified and finalized. Phase 2 development was scheduled to begin under the new timeline but kickoff is slightly delayed. IV&V does not have adequate visibility of DataHouse's development and integration activities to fully assess methodologies and processes.	0	4	0
Y	Y	G	Design	DataHouse completed Phase 2 design activities and deliverable. DLIR is currently reviewing the deliverable and compiling user feedback. Further clarification is needed of how BPR opportunities could be addressed through system design (2021.08.PM01) and integration with external systems (2019.07.IT02) for Phase 2.	0	0	0

TECHNOLOGY

- System Software, Hardware, and Integrations
- Design
- Data Conversion
- Quality Management and Testing
- Configuration Management
- Security

AUG	SEP	OCT	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
			Data Conversion	Phase 1 Case Management data validation testing is mostly complete with DLIR and DataHouse working to address the remaining issues. Improvements in data conversion processes and clarification of plans to convert paper files (2019.11.IT01) are still needed. IV&V does not have adequate visibility of DataHouse's data conversion activities to fully assess processes.	0	2	0
			Quality Management and Testing	Phase 1 Content Management UAT was scheduled to begin in November 2021 but it is unclear if recent technical issues may delay the start of UAT. DLIR provided training for testers on how to perform UAT and to discuss test processes. DLIR plans to break Phase 1 Case Management and Phase 2 UAT into UAT group test cycles. Exact dates for these test cycles still need to be finalized. DLIR and DataHouse clarified some key test processes and dates but additional improvements of the test plan and processes (2020.12.IT01, 2020.02.IT01, and 2019.10.IT01) are needed including assigning test cases, preparing test data, collecting and monitoring test metrics, and coordinating performance tests. DLIR and DataHouse need to finalize their quality management plans and quality metrics (2019.07.IT05). Quality metrics are critical for ensuring that quality is maintained with the aggressive timeline. IV&V does not have adequate visibility of DataHouse's testing or quality activities or documentation to fully assess methodologies and progress.	0	4	0
			Configuration Management	No significant updates since the prior report. A comprehensive configuration management plan including the DLIR approval process is needed (2019.07.IT06).	0	1	0

TECHNOLOGY

System Software, Hardware, and Integrations

Design

Data Conversion

Quality Management and Testing

Configuration Management

Security

AUG	SEP	OCT	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
Y	Y	Y	Security	DataHouse provided an updated vulnerability scan report that DLIR conditionally accepted and approved as the configuration baseline. With the December 2021 Phase 1 Content Management go-live quickly approaching, DLIR needs to finalize the security management plan (2019.07.IT07) and M&O roles and responsibilities (2019.09.IT02). Formal security policies (2019.10.IT02) are still 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 and take into consideration areas of increasing risk and approaching timeline. Up arrows indicate adequate improvements or progress made. Down arrows indicate a decline, inadequate progress, or incomplete resolution of previously identified findings. 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® v7	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 5	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
09/29/21	Case Management Conversion Testing Stand-Up Meeting
09/29/21	Case Management Conversion Working Session
09/30/21	Case Management Conversion Testing Stand-Up Meeting
09/30/21	Case Management Conversion Working Session
10/04/21	OCM Working Session
10/05/21	Phase 1 Content Management Demo
10/05/21	Case Management Conversion Testing Stand-Up Meeting
10/05/21	Case Management Conversion Working Session
10/06/21	IV&V Update and Planning Meeting
10/06/21	Case Management Conversion Testing Stand-Up Meeting
10/06/21	Case Management Conversion Working Session
10/06/21	IV&V DCD Update Meeting
10/07/21	Case Management Conversion Testing Stand-Up Meeting
10/07/21	Case Management Conversion Working Session
10/07/21	ETS Meeting

MEETINGS (CONTINUED)

DATE	MEETING DESCRIPTION
10/08/21	Monthly eCMS Steering Committee Meeting
10/11/21	OCM Working Session
10/12/21	Weekly PM Status Meeting
10/12/21	Case Management Conversion Testing Stand-Up Meeting
10/13/21	Case Management Conversion Testing Stand-Up Meeting
10/13/21	IV&V DCD Update Meeting
10/14/21	Case Management Conversion Testing Stand-Up Meeting
10/14/21	Security Working Session
10/18/21	OCM Working Session
10/18/21	IV&V DCD Update Meeting
10/19/21	Phase 2 Design Overview
10/20/21	Phase 2 Design Deliverable Review Session
10/20/21	IV&V DataHouse Findings Session
10/20/21	IV&V DCD Update Meeting
10/20/21	IV&V DataHouse Working Session
10/21/21	Weekly PM Status Meeting
10/21/21	Phase 2 Design Deliverable Review Session
10/21/21	Security Working Session
10/22/21	Phase 2 Design Deliverable Review Session
10/22/21	IV&V DCD Update Meeting

MEETINGS (CONTINUED)

DATE	MEETING DESCRIPTION
10/25/21	Phase 2 Design Deliverable Review Session
10/26/21	IV&V DCD Update Meeting
10/26/21	Content Management UAT Training
10/26/21	Content Management UAT Working Session

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	Lessons Learned Log (Updated 10/26/21)
Project Management	DLIR Lessons Learned Log (Updated 10/25/21)
Schedule	eCMS Microsoft Project Plan as of 10/21/21 (MPP file)
Schedule	Filtered Project Plans (Late Tasks, Upcoming 4 weeks) (10/05/21, 10/12/21, and 10/21/21)
Costs	DCD eCMS Modernization Project – Services (Updated 10/26/21)
Costs	DCD Licenses, Software, and Hardware Spreadsheet (10/25/21)
Risk and Issues	RAID (Risk Action Issue Decision) Log (Updated 10/22/21 by DataHouse Project Manager)
Requirements	Requirements Traceability Matrix (Updated 10/05/21, 10/14/21, and 10/26/21) (3 files)
BPR	DLIR Business Process Improvement Opportunities Log (10/25/21)

DOCUMENTS (CONTINUED)

TYPE	DOCUMENT
Development	DataHouse Development Team Status Meeting Minutes for 09/29/21
Development	DataHouse Development Team Status Meeting Minutes for 10/06/21
Development	DataHouse Development Team Status Meeting Minutes for 10/13/21
Development	DataHouse Development Team Status Meeting Minutes for 10/20/21
Development	Content Management Demo 10/05/21 Presentation
Development	Content Management Installation Instructions (Updated 10/19/21 and 10/25/21) (2 files)
Development	Content Management DCD Forms, Stacks, and Permissions (09/15/21)
Design	Amazon Web Services (AWS) Environment Solution Design Version 1.2 (Updated 09/30/21)
Design	Content Management Design Version 1.5 (Updated 10/12/21)
Design	Case Management Design Version 1.9 (Updated 10/18/21, pending DLIR approval)
Design	Phase 2 Case Management Design Sample DCD Documents (2 files)
Design	Reviewing Designs for Phase 2 Instructions (10/21/21)
Data Conversion	Phase 1 Case Management Data Conversion Validation Testing Spreadsheet (Testers, Test Cases, Test Scenarios, and Feedback Log) (10/25/21)
Data Conversion	Phase 1 Case Management Data Conversion Validation Testing User Feedback DLIR Status Tracker (10/25/21)
Data Conversion	Phase 1 Case Management Data Conversion Validation Testing Salesforce Bug Tracker Export (10/21/21)
Data Conversion	Phase 1 Case Management Data Conversion Validation Testing Documentation (3 files)
Testing	Case Management Test Cases (10/25/21)
Testing	Content Management Test Cases (10/25/21)
Testing	Phase 3 Test Cases (10/25/21)

DOCUMENTS (CONTINUED)

TYPE	DOCUMENT
Testing	Content UAT Training Documents (3 files)
Training	Case Management Training Guides Version 1.0 (10/21/21)
Training	Content Management Training Guides Version 1.1 (Updated 10/07/21) (3 files)
Communication	DCD eCMS Project Divisional Update Presentation (10/26/21)
Security	AWS Inspector Vulnerability Scan on UAT as of 10/19/21 (PDF and Excel file)
Governance	eCMS ESC Meeting Agenda (10/08/21)
Governance	eCMS ESC Meeting DataHouse Project Dashboard (10/08/21)

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
Business Process Reengineering	2021.08.PM01	Risk	Moderate	Moderate	Inadequate attention to and framework for BPR may reduce operational performance gains achieved.	In the initial round of Phase 2 design sessions, preliminary design mock-ups were presented and did not seem to completely address the requests and current operational pain points raised by DLIR SMEs during the requirements gathering stage. While some features were presented that will help to improve operational performance, there were missed opportunities to achieve even greater improvements through system automation, integration, and capabilities. Design sessions with SMEs were more focused around technical design aspects while the SMEs sometimes struggled to understand the business context of the design or how the system could help to solve operational challenges. Business process improvement is a key deliverable identified in the RFP and in DataHouse's contract but there are no formal plans or processes for BPR activities. As such, it is difficult to assess the effectiveness and completeness of BPR activities as well as the operational performance gains targeted and achieved. Solutions to address BPR opportunities can continue to be explored in follow-up design sessions as well as during the build stage; however, it is critical to identify and address these early to prevent additional effort to correct later. DLIR plans to meet with SMEs prior to meetings to better prepare them to actively and effectively participate in project activities. DataHouse plans to provide more background and business context during follow-up design sessions. Although this finding is reported under the Business Process Reengineering IV&V Assessment Category, this finding also impacts the criticality rating for Design. In addition to the specific recommendation made as a part of this finding, the IV&V recommendation made at finding 2020.12.PM01 will also help to address this issue.	2021.08.PM01.R1	Identify and analyze BPR opportunities.	•Consider areas with greatest impact or value due to transaction volume, severity of pain points, or priority within DLIR's operational goals (e.g., WC-3 form processing and reconciliation, insurance plans form processing, employer compliance monitoring, and Special Compensation Fund (SCF) recordkeeping). •Explore possible BPR solutions that include business process changes and/or system functionality. •Increase discussions between DLIR and DataHouse to better connect business processes to system capabilities. •Ensure SMEs understand the importance of BPR and when and how BPR will be discussed throughout the project.	Open	09/28/21: A few high impact and value BPR opportunities and possible system design options were discussed during follow-up Phase 2 design sessions. Further discussions are needed for DLIR SMEs to better understand how other BPR opportunities could be addressed through system design. 10/26/21: DLIR began to track some BPR opportunities in a log. Accuity will continue to assess BPR and design processes.		
Governance Effectiveness	2021.05.PG01	Risk	Moderate	Moderate	Insufficient support and guidance from project governance may limit the project's ability to overcome current project challenges.	Since December 2020, DLIR and DataHouse have been working to address and analyze various Content Management issues (refer to finding 2021.03.IT01). In March 2021, DataHouse presented three options to the ESC for the Content Management solution. Previous plans and timelines to make a decision regarding the Content Management solution were postponed to allow more time for additional analysis. DLIR and DataHouse recently agreed on a new plan and timeline of tasks to reach a decision regarding the Content Management solution by July 2021. As the Content Management implementation delays are stalling the Phase 1 Case Management and Phase 2 activities and significantly impacting project success, it is critical for project governance to ensure that the project sets and sticks to plans to address this and other high-impact issues (refer to Appendix D: Prior Findings Log). Additional guidance and more active involvement from the ESC and project sponsors are needed to help remove barriers and drive progress.	2021.05.PG01.R1	Increase project governance involvement.	•Discuss high-impact barriers/blockers and mitigation plans for critical issues with ESC. •Evaluate how various ESC members can be leveraged to remove barriers and execute mitigation plans. •Consider adding additional ESC meetings until critical issues are resolved. •Consider establishing more frequent touchpoints with DLIR and DataHouse project sponsors to more closely monitor and drive progress of executing mitigation plans for critical issues.	Open	06/25/21: The ESC convened for the monthly meeting to make the decision regarding the Content Management solution. Active involvement from the ESC and project sponsors are still needed while the project team works out the details of the path forward. 07/27/21: The ESC convened for the monthly meeting but there was limited discussion of the pending project schedule and other high-impact project risks. Continued guidance and active involvement from project governance are needed to drive progress and remove barriers. 08/25/21: The ESC approved the revised Phase 1 Content Management timeline. The ESC and both DLIR and DataHouse project sponsors need to be more actively involved to accelerate progress to improve project performance. 09/28/21: The monthly ESC meeting was cancelled in September but the DataHouse and DLIR project sponsors are meeting regularly. The revised timeline and payment schedules will be presented to the ESC in October 2021 for approval. 10/26/21: The ESC reviewed DataHouse's revised payment schedules and approved the new project timelines. Accuity will continue to monitor governance effectiveness.		

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System Software, Hardware, and Integrations	2021.03.IT01	Issue	High	High	Ongoing Content Management technical issues and solution analysis are causing project delays.	Since December 2020, DLIR and DataHouse have been performing various system analysis due to Phase 1 Content Management UAT technical issues and user feedback. In March 2021, DataHouse presented three options to the ESC for the Content Management solution including an option to replace and redevelop the Content Management scanning and data extraction component. DLIR is currently evaluating the options presented by DataHouse. DLIR planned to hold a special ESC meeting on March 25, 2021 to make a decision regarding the Content Management solution but postponed this in order to allow more time for additional analysis. The Content Management go-live was postponed several times due to ongoing analysis and could potentially delay the go-live for several months more. It is critical for DLIR and DataHouse to work together to timely and thoroughly complete analysis and agree upon how to proceed. In addition to the specific recommendations made as a part of this finding, the IV&V recommendations made at findings 2020.12.IT01, 2019.07.PM10, and 2019.10.PM01 will also help to address this issue.	2021.03.IT01.R1	Identify all major gaps in current solution.	•Review the reported issues/defects in the UAT quality log, close resolved entries, and identify unresolved gaps. •Review other project documentation and perform further system review to identify other major gaps. •Assign risk/criticality ratings for each identified gap.	Open	04/27/21: DataHouse is still working to investigate and address on-going technical issues. DLIR continues to evaluate the options presented by DataHouse and began to review unresolved issues from UAT to perform their gap analysis. DLIR needs to work with DataHouse to swiftly complete the analysis. 05/27/21: DataHouse is still working to address Datacap issues requiring fixes. DLIR and DataHouse agreed on a tentative plan and timeline of tasks to reach a decision regarding the Content Management solution by July 2021. 06/25/21: DLIR made the decision to replace and redevelop the Content Management scanning and data extraction component. DLIR is still in the process of gathering additional information to finalize the solution and gap analysis. 07/27/21, 08/25/21, and 09/28/21: Completion of DLIR's Content Management solution analysis is still pending. 10/26/21: A solution analysis will not be prepared to formally document how the replacement Content Management system addresses gaps in the prior solution. However, DataHouse did update the Content Management design deliverable to document how the replacement solution will address some of the gaps identified in feedback and issues from the previous Content Management solution UAT. Additionally, a meeting was scheduled for late October 2021 to discuss how technical issues from the prior solution will also be addressed by the replacement solution. Accuity will continue to assess progress to ensure that all major gaps and technical issues are addressed by the replacement solution.		
							2021.03.IT01.R2	Complete the analysis of solution options.	•Evaluate how each option addresses all major gaps. •DataHouse should provide additional clarification and demonstration of the functionality to be provided by each of the options as it relates to the stand-alone Content Management solution and the integrated Case Management solution. This will help DLIR to understand the comprehensive solution and to identify limitations that are only temporary until additional functionality is provided in later phases. •Consider if additional options are needed based on the completed listing of risk/criticality-rated major gaps. •Consider impacts to current phase as well as total solution/project; short-term costs and total cost of ownership (TCO); and impacts to the implementation plan and users.				
Business Process Reengineering	2020.12.PM01	Risk	Moderate	Moderate	Unclear business processes supporting the new system may impact testing and go-live readiness.	Ongoing Phase 1 Content Management UAT is raising questions regarding how the system will be used after interim Content Management go-live as well as the integrated Case Management go-live. The most critical business process in question is the use of the new quick response (QR) coded workers' compensation forms and the related business process for data entry and scanning of these forms during the interim phase. Other examples of business processes that need to be clarified include initial paper conversion scanning, subsequent separation and indexing of files, transferring of cases to LIRAB during the interim, preparing and viewing select documents for hearings, storing/indexing files associated to multiple cases, and acceptable use of annotations in electronic documents. Clarification of business processes is critical to ensure that proper UAT test cases are designed around how the system will be used in the future. Clear understanding of business processes is also important to provide timely communications and necessary training to impacted stakeholders prior to go-live.	2020.12.PM01.R1	Clarify redesigned business processes.	•Identify business processes that need to change with the modernized system. •Discuss and evaluate options for redesigning identified business processes considering impacts on stakeholders. •Ensure that communication and training plans are updated for major changes in business processes. •Consider business process improvement performance goals and success metrics. •Consider creating business process flows for the interim Content Management phase. •Consider creating informational flyers/cheat sheets to help internal and external stakeholders understand and prepare for business process changes.	Open	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21: Some discussion of business processes occurred, but DLIR cancelled most of the recurring business process meetings in the current month. 05/27/21 and 06/25/21: No updates to report. 07/27/21 and 08/25/21: Questions about business processes and possible opportunities for BPR are raised during Phase 2 design sessions. 09/28/21: DLIR needs to discuss and decide upon key business processes for the Content Management system to adequately plan and prepare for upcoming UAT and go-live. 10/26/21: DLIR reached a decision on a critical Content Management business process but needs to further clarify the process details for the upcoming go-live. Accuity will continue to assess business process decisions and documentation.		

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Quality Management and Testing	2020.12.IT01	Issue	High	High	Outstanding project risks are impairing the execution of UAT which may impact quality and project success.	DLIR began UAT of the Phase 1 Content Management solution and is scheduled to complete testing in the first week of January 2021. DLIR was not able to sufficiently prepare test cases prior to UAT kickoff, testing is generally not formally documented, and adequate testing resources were not secured or trained. DLIR and DataHouse did implement a log for tracking UAT feedback and issues as well as daily meetings to discuss and review the latest log entries submitted by DLIR testers. DataHouse is timely responding to log entries but it is unclear what DLIR's process and thresholds are for evaluating and ultimately accepting residual issues in aggregate. Adequate UAT is necessary to ensure quality and overall project success goals are met and that the project is able to move forward. The following project risks and issues (refer to Appendix D: Prior Findings Log) are impairing UAT execution: •Inadequate Resources (2019.07.PM14, 2020.03.PM01) – DLIR does not have adequate testers and key DCD testers still need to get involved in testing activities. Additional DLIR resources are also needed to assist with test case preparation, tester training, and testing oversight. •Inadequate Schedule and Resource Management Processes (2019.07.PM13 and 2019.09.PM02) – Formal tools and processes are not used to manage DLIR testing resources' schedule and tasks. •Incomplete Requirements (2019.07.PM10) – User feedback and technical issues during UAT highlights the lack of adequately documented technical and functional requirements. •Ineffective Communication (2019.07.PM06) – Limited communications occurred between the Content Management development team and DLIR during development. Recent daily meetings have helped to improve communications but additional discussions are needed to increase DLIR's understanding of the technical solution components. •Incomplete DLIR and DataHouse Test Plans (2019.10.IT01, 2020.02.IT01) – DLIR and DataHouse have not yet finalized their test plans. Test scope, test processes, and testing documentation need to be further clarified between DLIR and DataHouse. •Technical Issues – A number of technical issues were encountered during UAT. The slowness of the system has prevented DLIR from bringing on additional testers for UAT. DLIR and DataHouse are in the process of investigating the issues and plan to perform network and application testing in late December 2020. •Unclear Business Processes (2020.12.PM01) – Unclear business processes surrounding the new technical solution creates confusion on testing of how the new system will be used in the future. •Incomplete Quality Management Plan and Go/No-Go Decision Criteria (2019.07.IT05, 2020.09.IT01) – DataHouse and DLIR still need to finalize their quality management plan and define quality metrics and acceptance criteria. In addition to the specific recommendations made as a part of this finding, the IV&V recommendations made at the findings referenced above will also help to address this issue.	2020.12.IT01.R1	Develop a prioritized plan to address UAT execution issues.	•DLIR and DataHouse should work together to evaluate and prioritize the UAT execution issues with the greatest impact on the Content Management go-live date. •Develop a clear plan and realistic timeline to address UAT execution issues considering availability of DLIR project resources.	Open	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21: DLIR performed some follow-up Phase 1 Content Management retesting of DataHouse fixes for on-going technical issues. The process for prioritizing and addressing issues/defects is still unclear. 05/27/21: Both Phase 1 Content Management and Case Management UAT are on hold due to ongoing Content Management issues. It is unclear when DLIR plans to resume Content Management UAT and when Case Management UAT will begin. 06/25/21: Content Management UAT will need to be reperformed for the new solution. Case Management UAT is still on hold and it is unclear when testing will begin. However, the new DLIR business analyst contractor is beginning to draft test scripts and will be responsible for managing testing activities including issue/defect tracking. 07/27/21: DLIR is making progress to establish testing processes and templates including issue/defect reporting and tracking. 08/25/21: DLIR continued to prepare additional test cases and refine testing processes. 09/28/21: Identification and coordination of specific testers for the various testing efforts, preparation of test data and test scripts, and mapping out the scope of each test cycle is still in progress. 10/26/21: It is unclear what the impact of recent technical issues may be to the start of Phase 1 Content Management UAT scheduled to begin in November 2021. UAT execution issues need to continue to be analyzed, prioritized, escalated, and resolved to ensure UAT can be timely completed. DLIR and DataHouse made improvements to test processes and plans (refer to finding 2019.10.IT01) to better prepare for upcoming UAT. DLIR and DataHouse still need to further improve the issue/defect reporting tool and resolution process. Accuity will continue to evaluate UAT execution and issue/defect resolution processes.		
							2020.12.IT01.R2	Improve DLIR understanding of issue/defect resolution.	•DataHouse should provide additional clarification and demonstration of the functionality to be provided by the stand-alone Content Management solution and the integrated Case Management solution. This will help DLIR users understand limitations that are only temporary and the additional functionality provided in later phases. •For issues not fixed by DataHouse, DLIR should ensure stakeholders understand options (e.g., work arounds, change requests). •DLIR should assign risk/criticality ratings for each of the unresolved issues to provide quantifiable metrics for system acceptance and the go/no-go decision. •Consider which issues/defects can be addressed after go-live by agreed-upon resolution dates.				
System Software, Hardware, and Integrations	2020.09.IT01	Issue	Moderate	High	Unclear go/no-go criteria may impact the orderly completion of all tasks required for system go-live.	The criteria for the go/no-go decision are not completely and clearly defined and agreed upon. The decision to go-live involves many areas and tasks of the project including testing, quality management, security, data conversion, training, communications, and deliverable review, as well as the operational readiness of users. Various project plans often include or establish select criteria; however, some of these related plans pending completion or finalization include the test plans (2020.02.IT01 and 2019.10.IT01), the quality management plan (2019.07.IT05), and security management plan (2019.07.IT07). Additionally, acceptance criteria for requirements (2019.10.PM01) and for deliverables (2019.07.PM03) have not been established. The Content Management system is scheduled to go-live on November 25, 2020 and Case Management on June 14, 2021. With the Content Management go-live date quickly approaching, it is important to establish clear criteria for the go/no-go decision. DLIR is planning to draft a go/no-go checklist to summarize all of the criteria and tasks. DataHouse plans to provide a cutover plan to provide additional information about pre and post go-live tasks.	2020.09.IT01.R1	Establish complete and clear go/no-go criteria.	•Establish go/no-go criteria in advance of the go-live decision to allow for sufficient time for tasks to be completed and criteria satisfied. •Ensure all parties agree upon go/no-go criteria including impacted stakeholders. •Consider go/no-go criteria such as all requirements meet acceptance criteria and are approved by DLIR, end user training is completed, and critical bugs and issues are identified and resolved. •Consider setting go-live countdown checkpoints (e.g., 15, 30, 60, 90 days) for specific go/no-go criteria or tasks to be reviewed or completed by.	Open	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21 and 05/27/21: As a part of the upcoming Content Management analysis and decision, DLIR should reevaluate the draft go/no-go criteria based on current project status and any revisions to project success metrics (2019.07.PG05). 06/25/21: DLIR reached a decision regarding the Content Management solution. DLIR should reevaluate go/no-go criteria as part of the revisions to project plans for the new solution. 07/27/21 and 08/25/21: No updates to report. 09/28/21 and 10/26/21: With Content Management go-live approaching in less than three months, it is critical that go/no-go criteria are finalized. Clear go/no-go and acceptance criteria are critical for ensuring quality and overall project success goals are satisfied and verified prior to acceptance and moving the system into production. Accuity will evaluate the checklists and criteria as finalized.		

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Project Organization and Management	2020.07.PM01	Risk	Moderate	High	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. Incremental progress was made for many findings but a majority are still open. Progress was limited by availability of project resources and competing organizational and project priorities. With the kick-off of Phase 2 in August, this is a great opportunity to review identified deficiencies, evaluate the effectiveness of current project processes, reflect on lessons learned on the project to-date, and make necessary improvements for upcoming activities. Additionally, addressing deficiencies will better position the project to handle and adjust to changes going forward including potential rapidly evolving circumstances related to the COVID-19 pandemic (refer to finding 2020.03.PM01).	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21: No updates to report. 05/27/21: DLIR and DataHouse held one meeting to discuss prior IV&V findings and develop mitigation plans. DLIR and DataHouse plan to reinstate recurring meetings going forward. 06/25/21: DLIR and DataHouse continued to meet to discuss prior IV&V findings and mitigation plans. With the decision to replace a component of Content Management, this is an opportunity to relook at previously identified deficiencies and consider lessons learned from the first time around to improve execution of the new solution. 07/27/21: DLIR and DataHouse continued to meet to discuss prior IV&V findings and mitigation plans. DLIR held a retrospective of the first Content Management development and shared this feedback with DataHouse. IV&V does not have adequate visibility to determine how these lessons learned are being factored into plans for the replacement solution as well as other project plan revisions. 08/25/21 and 09/28/21: There are 30 open findings from prior reports that include 15 from the August 2019 IV&V Initial Report. While some progress continues to be made, the pace of improvements is not enough to significantly improve project performance. Prior IV&V findings and lessons learned should be timely addressed to ensure these same issues do not continue to hinder project performance going forward. Continuing in the same way will likely lead to the same results. 10/26/21: DLIR and DataHouse made incremental improvements in many areas of the project. The DataHouse Project Sponsor also initiated discussions with IV&V to begin discussing how to address open findings. DLIR and DataHouse should continually reassess project performance, prioritize areas to focus on for improvement, and make adjustments to processes and plans accordingly. 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.				
Quality Management and Testing	2020.02.IT01	Risk	High	Moderate	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21, 05/27/21, 06/25/21, 07/27/21, 08/25/21, and 09/28/21: No updates to report. 10/26/21: Clarification of the test approach and plans for Phase 1 Content Management performance testing is needed including roles and responsibilities, tasks and dates, and the process for baseline performance metrics collection. Accuity will continue to evaluate test plans and 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.				

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Data Conversion	2019.11.IT01	Issue	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21: DLIR and DataHouse held meetings to discuss and clarify data conversion issues and plans, but additional clarification is needed. 05/27/21: DLIR completed a review of the Phase 1 Case Management data conversion deliverable and submitted questions and feedback to DataHouse. 06/25/21: DataHouse provided responses to DLIR's feedback. A follow-up meeting is scheduled for July 2021 to further discuss. 07/27/21: DLIR approved DataHouse's Phase 1 Case Management data conversion deliverable; however, data conversion validation testing is still on hold for pending system training and project schedule revisions. 08/25/21: Phase 1 Case Management data conversion validation testing is tentatively scheduled for September 2021. DLIR's plan and test cases for performing the testing are still unclear. 09/28/21: Accuity changed this finding from a risk to an issue as the unclear plans and processes are impacting execution. Phase 1 Case Management data validation testing is currently underway. DLIR SMEs are making progress to complete tests, however, execution was delayed due to discussion and clarification of data conversion testing processes, training of testers on how to perform testing, and assigning testers specific test cases. Identification, documentation, or execution of additional data validation test scenarios are still needed. 10/26/21: Phase 1 Case Management data validation testing is mostly complete with DLIR and DataHouse working to address the remaining issues. After going through the data conversion testing for Phase 1, DLIR better understands DataHouse's data conversion process and the importance of formalizing their own test plans. DLIR and DataHouse should continue to refine processes including issue status and resolution, DLIR testing documentation, and test metrics. DLIR and DataHouse still need to discuss and plan for the conversion of paper files. Accuity will continue to evaluate data conversion plans and processes.		
							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).				
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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21, 05/27/21, and 06/25/21: No updates to report. 07/27/21: Phase 2 user stories were added to the RTM. Similar to Phase 1 user stories, there is no traceability between contract requirements and requirement subsets used by the development teams. Acceptance criteria has also not been established. 08/25/21 and 09/28/21: No updates to report. 10/26/21: DataHouse continues to make updates to the RTM for changes in underlying deliverables using the same traceability approach. As a way to mitigate the unclear traceability in contract requirements to requirements deliverables, DLIR is using the contract requirements to develop test cases for upcoming Phase 1 Content Management and Case Management UAT. Accuity will continue to evaluate the effectiveness of requirements traceability and DLIR's testing mitigation approach.		

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Quality Management and Testing	2019.10.IT01	Issue	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21: DLIR plans to procure additional testing resources to assist with planning, managing, and executing testing. 05/27/21: DLIR procured an additional business analyst resource to assist with testing and is expected to begin in June 2021. 06/25/21: The new DLIR business analyst contractor will be responsible for managing testing activities. She is beginning to draft test scripts and establish testing procedures and tools. 07/27/21: DLIR is making progress to establish testing processes, create testing templates, and prepare test cases. 08/25/21: DLIR continued to prepare additional test cases and refine testing processes. 09/28/21: Identification and coordination of specific testers for the various testing efforts, preparation of test data and test scripts, and mapping out the scope of each test cycle is still in progress. 10/26/21: DLIR plans to break Phase 1 Case Management and Phase 2 UAT into UAT group test cycles but exact dates for these test cycles need to be finalized. DLIR and DataHouse also clarified some key test processes and dates prior to the start of UAT. DLIR still needs to assign test cases, prepare test data, collect and monitor test metrics, and coordinate performance tests. Accuity will continue to evaluate DLIR's test plan and approach.		
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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21: No updates to report. 05/27/21: DLIR began to draft a security policy template. 06/25/21 and 07/27/21: No updates to report. 08/25/21: DLIR prepared the first draft of an access control policy. 09/28/21 and 10/26/21: No updates to report. 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	Moderate	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21 and 05/27/21: No updates to report. 06/25/21: DLIR plans to combine all the pending Datacap related change requests into one change request related to the new Encapture solution. 07/27/21: DataHouse drafted the new change request to document the switch from Datacap to Encapture; however, DLIR has not yet approved the change request due to ongoing discussions of the proposed Content Management timeline. DataHouse should also document the resulting project schedule changes for Phase 1B, 2, and 3 in a formal change request as prescribed by the Project Management Plan. 08/25/21 and 09/28/21: The Content Management change request is pending DLIR approval. 10/26/21: Accuity decreased the severity rating from Level 1 (High) to Level 2 (Moderate). Although the details of the change request to switch from Datacap to Encapture were not updated, DataHouse did update the Content Management design deliverable to document how the replacement solution will address some of the gaps identified in feedback and issues from the previous Content Management solution UAT. DLIR agreed that this approach would address the lack of details in the change request. Additionally, schedule changes continue to not be documented in formal change requests. However, DLIR and DataHouse do present the high-level timelines to the ESC for approval. Accuity will continue to evaluate the effectiveness of processes to manage change.		
							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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21: Many of the recurring meetings were cancelled due to the pending Content Management solution. 05/27/21 and 06/25/21: No updates to report. 07/27/21: DLIR developed a template to track staff availability; however, this template and process still need to be implemented with all project team members. 08/25/21: No updates to report. 09/28/21: The proposed timeline is not based on an analysis of available resources but rather on stakeholder needs for the new system. As such, new resource management strategies are required to ensure that project resources timely complete tasks and stay on track with the proposed timeline. Additional DLIR area leads would help to manage various workstreams and phases. With all three phases running concurrently, this will require greater coordination and utilization of all available project resources. 10/26/21: DLIR plans to manage UAT resources by breaking UAT into test cycles and teams, scheduling specific days of the week for testing, and holding recurring meetings to address questions and issues. Additional resource management strategies are still needed for other activities and phases. 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	Risk	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21, 05/27/21, 06/25/21, 07/27/21, 08/25/21, and 09/28/21: No updates to report. 10/26/21: With the December 2021 Phase 1 Content Management go-live quickly approaching, it is critical for M&O roles and responsibilities to be clarified and finalized. Accuity will continue to evaluate M&O as roles and responsibilities are clarified.		
Data Conversion	2019.09.IT03	Risk	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21, 05/27/21, 06/25/21, 07/27/21, 08/25/21, 09/28/21, and 10/26/21: 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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21, 05/27/21, 06/25/21, 07/27/21, 08/25/21, 09/28/21, and 10/26/21: No updates to report. 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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21 and 05/27/21: DLIR and DataHouse still work in a very siloed and disconnected manner. They need to work more collaboratively to tackle and overcome the challenges facing the project today. 06/25/21: Some progress was made to improve collaboration between DLIR and DataHouse to arrive at a decision for the Content Management solution. DLIR and DataHouse need to work together to revise project plans and schedule for the new Content Management solution to set a clear path forward. 07/27/21: DLIR and DataHouse still need to work together better to reevaluate and readjust the project plans in a timely manner. Additionally, Content Management development activities are already occurring for the new solution but DLIR does not have visibility of this progress. DLIR plans to implement a weekly touchpoint meeting with both Content Management and Case Management development teams. 08/25/21: DLIR and DataHouse changed the format of weekly project management meetings to improve efficiency and to better discuss project schedule, risks, and ongoing activities with core project team members. 09/28/21: Accuity increased the severity rating from Level 2 (Moderate) to Level 1 (High). Substantial changes in how the DLIR and DataHouse project teams work together will be necessary to keep up with the fast pace of the project under the proposed timeline. This includes greater collaboration, transparent dialogue, and timely adjustments to manage various workstreams and phases. 10/26/21: There were improvements in collaboration between DLIR and DataHouse. The DLIR Data Conversion Lead is working closely with the DataHouse counterpart. The DLIR business analyst contractor is also working directly with the Case Management development team. Recurring meetings between the Content Management development lead and DLIR test team are scheduled to occur during UAT. DataHouse also agreed to hold periodic meetings focused on technical topics. With the aggressive timeline, effective project management including prioritization of tasks, fluid collaboration, transparent dialogue, swift risk and issue resolution, and careful coordination of limited resources are key. 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.					
Project Organization and Management	2019.07.PM03	Issue	Moderate	Moderate	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21: DLIR and DataHouse met to walk through the Case Management data conversion taxonomy deliverable. Approval is still pending. 05/27/21: DLIR completed a review of the Phase 1 Case Management data conversion deliverable and submitted questions and feedback to DataHouse. The Phase 2 requirements deliverable is still pending review and approval, however, DataHouse is moving forward with design stage activities. 06/25/21: Additional discussions of the Phase 1 Case Management data conversion deliverable are occurring. However, the Phase 2 requirements deliverable is still pending approval and the most recent Phase 1 Case Management operations documentation was not reviewed in a walkthrough meeting. It is critical for DLIR to prioritize the review of deliverables that have the most impact on the project schedule. 07/27/21: Pending deliverables were approved by DLIR; however, DLIR's acceptance criteria and review processes remain unclear or are inconsistently performed. 08/25/21: DLIR performed a detailed review of and provided feedback on Phase 1 Case Management training materials. Phase 1 Content Management requirements and design deliverables updated for the new solution is pending review. 09/28/21: DLIR review and acceptance of several deliverables is still pending. 10/26/21: Accuity decreased the severity rating from Level 1 (High) to Level 2 (Moderate) as DLIR completed review and approval of many pending deliverables. DataHouse held deliverable walkthrough meetings for the Phase 2 design deliverable and vulnerability scan results. DLIR also implemented working sessions and a feedback log with SMEs to facilitate more timely review of the Phase 2 design deliverable. 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	Moderate	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21 and 05/27/21: Minimal meetings between DLIR and DataHouse are occurring. 06/25/21: Communications between DLIR and DataHouse increased to reach the Content Management decision. DLIR and DataHouse need to continually communicate throughout the implementation of the new Content Management solution and during the critical data conversion and UAT activities. 07/27/21: DLIR plans to implement a weekly touchpoint meeting with both Content Management and Case Management development teams to improve effectiveness and timeliness of communications between DLIR and DataHouse. 08/25/21: Changes to communications between Core DLIR and DataHouse project team members were implemented to better discuss project schedule, risks, and ongoing activities. A weekly touchpoint meeting with the DataHouse development teams is still pending. 09/28/21: DLIR and DataHouse implemented additional recurring meetings with select project team members for Phase 1 Case Management data conversion activities which helped to improve timeliness of communications. With plans to execute all three phases simultaneously, additional improvements in the effectiveness and timeliness of communications are still needed for all DLIR and DataHouse project team members. 10/26/21: Recurring meetings between the Content Management development lead and DLIR test team are scheduled to occur during UAT. DataHouse also agreed to hold periodic meetings focused on technical topics. The changes made to the weekly project management meeting are helping to improve discussions about upcoming project activities as well as risks and issues and mitigation plans. Open and honest dialogue is critical to keep up with the aggressive project pace. Accuity will continue to evaluate the effectiveness of these project communication channels.		
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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21: DLIR began to plan for some internal stakeholder briefings and draft presentations. 05/27/21: DLIR began holding internal stakeholder briefings to communicate project status and upcoming activities. Additional sessions with other groups of internal stakeholders are planned for June 2021. 06/25/21: Additional DLIR internal stakeholder briefing sessions were pushed back to July 2021. 07/27/21: An additional DLIR internal stakeholder briefing session was held. 08/25/21 and 09/28/21: No updates to report. 10/26/21: DLIR is preparing for the annual divisional meeting to provide project updates for internal DCD stakeholders. DLIR is considering having this quarterly for the remainder of the project. Communication activities and methods for external stakeholders need to be revisited especially related to new forms, go-live of the new electronic submission processes and the portal, and with any external stakeholders assisting with testing. 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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21: DLIR continues to work on the OCM plan and prepare for OCM activities. Planned internal briefings and surveys will help to prepare stakeholders and collect feedback for upcoming Case Management UAT. 05/27/21: DLIR began to hold stakeholder meetings and administer a survey to collect feedback to help in further developing the OCM plan. 06/25/21: No updates to report. 07/27/21: DLIR made some progress to review survey results and update OCM assessments but additional work is needed to develop specific OCM activities. 08/25/21: DLIR plans to meet with SMEs prior to meetings to better prepare them to actively and effectively participate in project activities. 09/28/21: DLIR held additional working sessions and trainings to help SMEs participate in ongoing data validation testing. DLIR needs to continue developing their OCM plans and approach to better prepare SMEs prior to the start of the activities and identify those who need additional targeted OCM strategies. 10/26/21: DLIR continues to hold supplemental working sessions and trainings to help DLIR project team members prepare for and participate in project activities. DLIR needs to further develop the OCM plans and approach to increase stakeholder engagement, collect periodic readiness data, and reinforce changes related to the upcoming Content Management go-live. Accuity will continue to evaluate the OCM approach and monitor the change readiness of project stakeholders.		
Risk Management	2019.07.PM09	Issue	High	Moderate	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21: No updates to report. 05/27/21: DLIR and DataHouse met to discuss the Content Management issue and developed a tentative mitigation plan. DLIR and DataHouse also reinstated recurring meetings to regularly discuss risks and issues. 06/25/21: DLIR and DataHouse continue to meet regularly to discuss risks and issues and mitigation plans. 07/27/21 and 08/25/21: DLIR and DataHouse continue to meet regularly to discuss risks. Additional time and attention are needed on risks due to the increasing number and rising severity of risks to successful project completion. 09/28/21: DLIR and DataHouse continue to develop some risk mitigation plans for the highest priority risks. With the fast pace of the proposed timeline, it is critical for DLIR and DataHouse to improve risk management processes so that risks and issues are proactively identified, swiftly mitigated, and redirected if needed. 10/26/21: DLIR and DataHouse continue to develop some risk mitigation plans for the highest priority risks. With the aggressive timeline, it is critical for DLIR and DataHouse to continue to improve risk management processes so that risks and issues are proactively identified and swiftly mitigated. 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	High	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21 and 05/27/21: DLIR began to review unresolved issues from UAT to perform their requirements gap analysis. The identified gaps in requirements need to be evaluated by DLIR and DataHouse as a part of the pending solution analysis (2021.03.IT01). 06/25/21: DLIR made some progress to identify gaps in requirements for the Content Management solution. It is unclear how these gaps and any net new requirements identified during Content Management UAT will be addressed in the development of the replacement Content Management solution. 07/27/21: DLIR approved DataHouse's Phase 2 requirements deliverable; however, it is unclear how new or clarified requirements raised during Phase 2 design sessions are captured and updated in requirements documentation. 08/25/21: DataHouse delivered the updated Phase 1 Content Management requirements deliverable but it did not include any of the requirements clarified or identified during Content Management UAT. 09/28/21: DataHouse and DLIR still are not in agreement on the Phase 1 Content Management requirements that were clarified or identified during UAT which could impact the Content Management development, testing, and the go-live scheduled for December 2021. Additionally, with the aggressive timeline, careful management of requirements is needed to ensure that there is not a reduction in scope without a process for prioritizing and approving changes in requirements. 10/26/21: DataHouse and DLIR clarified Phase 1 Content Management requirements in an updated deliverable. DLIR identified gaps in documented requirements. As a way to mitigate the missing requirements in documented deliverables, DLIR is using the contract requirements and other requirements discussed with SMEs during project meetings to develop test cases for upcoming Phase 1 Content Management and Case Management UAT. 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.				
Cost, Schedule and Resource Management	2019.07.PM12	Issue	High	Moderate	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21, 05/27/21, and 06/25/21: DLIR is working on budgeting project and system costs. DLIR still needs to develop a comprehensive project budget to track and monitor all project costs. 07/27/21 and 08/25/21: The DataHouse contract needs to be revised for Content Management license costs. Additionally, the payment schedules still need to be revised and the contract period of performance needs to be reevaluated for possible extension. 09/28/21: DLIR updated the budget to add additional project costs. DataHouse tentatively agreed to extend their contract to December 2022 at no additional cost and provided a revised payment schedule. Both will be presented to the ESC in October 2021. 10/26/21: Accuity decreased the severity rating from Level 1 (High) to Level 2 (Moderate). DataHouse is still prepaid for Phase 1 and 2; however, DataHouse provided revised payment schedules which adjusts Phase 3 invoices to make corrections for Phase 1 and 2 amounts. DLIR added additional costs to the budget report. Accuity will continue to monitor project costs, 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	Issue	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21: The prolonged Content Management solution implementation keeps the limited DLIR project resources busy with performing the Content Management solution analysis and retesting (2021.03.IT01). This is delaying Case Management data conversion and UAT activities that are critical for achieving the current Phase 1 go-live schedule. 05/27/21: DLIR and DataHouse agreed on a tentative plan and timeline of tasks for the Content Management decision, but it is still unclear what the impact of these Content Management delays are on the Phase 1 Case Management and Phase 2 go-live dates. It is also unclear how the tasks related to those phases will be managed, rescheduled, and executed while the Content Management decision is pending. 06/25/21: DataHouse is in the process of revising the project schedule based on the Content Management solution decision. It is unclear how the various phases will be managed concurrently going forward. It is critical that the project schedule is revised in the next month and for DLIR and DataHouse to set realistic and achievable dates based on availability of DLIR project resources. 07/27/21: Accuity reopened the 2019.07.PM13.R1 recommendation as changes to the project schedule need to be formally documented and approved (2019.09.PM01). Accuity also added a new recommendation 2019.07.PM13.R4 for DLIR and DataHouse to complete the project schedule assessment and revisions for all three phases including any potential changes to the DataHouse contract. 08/25/21: The high-level revised Phase 1 Content Management dates were approved, but there are a few key tasks or task dependencies missing from the detailed schedule based on lessons learned from the previous Content Management solution development. DLIR and DataHouse are now working on revisions to the Phase 1 Case Management timeline and plan to work on Phase 2 and 3 revisions within the next month. 09/28/21: DLIR and DataHouse tentatively agreed on revisions to the high-level timeline that extends the schedule six months to December 2022. DLIR and DataHouse are currently working out the details of the proposed project schedule and will present the revised timeline to the ESC in October 2021. The proposed timeline is aggressive with all three phases running simultaneously and is not based on an analysis of available resources but rather on stakeholder needs for the new system. As such, improvements in how the project schedule is monitored, adjusted, and mitigated are needed to prevent the significant delays experienced on the project to-date. 10/26/21: The ESC approved the new project timelines. DataHouse updated the detailed project schedule tasks for the new timelines and added more detailed Phase 2 tasks. 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.					
							2019.07.PM13.R4	Complete assessment and revisions of project schedule.	•Revise tasks, deliverable milestones, and go-live dates for all three phases. •Evaluate whether remaining project work can be accomplished in the remaining period of performance of DataHouse's contract or if the contract needs to be extended. •Set realistic and achievable dates based on availability of DLIR project resources.				
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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21: DLIR is in the process of procuring an additional business analyst resource to assist with testing and requirements. 05/27/21: DLIR procured an additional business analyst resource expected to begin in June 2021. 06/25/21: The new DLIR business analyst contractor is now onboard and helping to support the over-tasked DLIR project manager in some key areas of responsibilities. 07/27/21 and 08/25/21: Additional DLIR project resources are needed for data conversion and UAT. 09/28/21 and 10/26/21: The proposed timeline is not based on an analysis of available resources but rather on stakeholder needs for the new system. As such, additional DLIR project resources including area leads are needed to achieve the aggressive timeline. 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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21: DataHouse provided some explanation of interfaces between the Content Management and Case Management solutions. DataHouse plans to demo the integrated Content Management and Case Management solution to DLIR and the ESC in May 2021 which will help DLIR to verify that the interface solution does work. 05/27/21: DataHouse held an initial demo of the integrated Content Management and Case Management solution to DLIR but additional details of the interface are needed. 06/25/21 : No updates to report. 07/27/21, 08/25/21, 09/28/21, and 10/26/21: Interface requirements were raised during Phase 2 design sessions but the interface solution is still unclear. Accuity will continue to evaluate the interface solution.		
							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	High	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21, 05/27/21, 06/25/21, 07/27/21, and 08/25/21: Quality metrics are critical for evaluating and monitoring current project activities such as training, testing, and go-live readiness. Selection of quality metrics should consider revisions and reprioritization of project goals and success metrics based on the current project status. 09/28/21: DLIR discussed possible quality metrics to use but IV&V has not yet seen collection or monitoring of any metrics. 10/26/21: DLIR is working on establishing metrics for the Phase 1 Case Management data conversion validation testing results and for upcoming UAT. 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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21, 05/27/21, 06/25/21, 07/27/21, 08/25/21, 09/28/21, and 10/26/21: No updates to report. Accuity will continue to evaluate the configuration management plan and approach.		
Security	2019.07.IT07	Risk	Moderate	Moderate	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	Refer to prior IV&V Monthly Report for status updates before April 2021. 04/27/21, 05/27/21, 06/25/21, 07/27/21, and 08/25/21: No updates to report. 09/28/21: The next round of the AWS vulnerability scans is scheduled for October 2021. 10/26/21: DataHouse provided an updated vulnerability scan report that DLIR conditionally accepted and approved as the configuration baseline. With the December 2021 Phase 1 Content Management go-live quickly approaching, DLIR needs to finalize the security management plan and M&O roles and responsibilities. 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	2020.03.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.	Closed	Refer to the June 2020 IV&V Monthly Report for status updates prior to July 2020. 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. 09/28/20, 10/23/20, 11/24/20, 12/23/20, and 01/26/21: No updates to report. 02/23/21, 03/24/21, 04/27/21, and 05/27/21: DLIR and DataHouse should consider the continuing impacts the COVID-19 pandemic will have on the availability of DLIR project resources as a part of the upcoming Content Management analysis and decision and while reprioritizing project goals and priorities. 06/25/21: Almost all employees returned to DCD as of June and DLIR is able to make necessary procurements for the eCMS Project.	6/25/2021	Although there will continue to be impacts of the pandemic on costs, schedule, and resources, Accuity will continue to monitor these under the other existing findings (2019.09.PM02, 2019.07.PM12, 2019.07.PM.13, and 2019.07.14).
							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.				

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Project Organization and Management	2020.08.PM01	Risk	Moderate	Moderate	Inadequate planning and lack of a detailed project schedule for Phase 2 may impact the execution of Phase 2 activities and result in delays.	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.	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.	Closed	09/28/20: DataHouse updated the project management plan to include some additional details regarding Phase 2 deliverables and several project management processes. Additional clarification of project management processes (e.g., performance metrics, monitoring DLIR project resource workloads, resolving conflicts, or priorities for phases), contingency plans, and the project schedule are still needed. 10/23/20: DataHouse and DLIR discussed and clarified project management processes. In general, project performance metrics are not collected or monitored. Instead DataHouse primarily uses the project schedule to manage and monitor project performance. DataHouse and DLIR clarified processes for resolving conflicts or changes in resource availability and priorities for phases. DataHouse has not yet added the detailed tasks for Phase 2 beyond the planning stage and plans to add more detailed tasks as more specific project information (e.g., features, number of epics) is determined. The Case Management development team also monitors progress with stats on the number of user stories completed in each sprint and the number in the backlog.	10/23/2020	Closed as DataHouse and DLIR discussed project management processes. The need for a more detailed Phase 2 project schedule and improvements in project management processes will continue to be monitored under the 2019.07.PM09 Risk Management, 2019.07.PM13 Schedule Management, 2019.07.PM14 Inadequate Resources, and 2019.09.PM02 Resource Management findings.
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.

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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.
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.					

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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.					
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 2019.07.PM10 requirements finding.

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
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
08/21/20	Monthly On-Site IV&V Review Report
09/28/20	Monthly On-Site IV&V Review Report
10/23/20	Monthly On-Site IV&V Review Report
11/24/20	Monthly On-Site IV&V Review Report
12/23/20	Monthly On-Site IV&V Review Report
01/26/21	Monthly On-Site IV&V Review Report
02/23/21	Monthly On-Site IV&V Review Report

AS OF DATE	DESCRIPTION
03/24/21	Monthly On-Site IV&V Review Report
04/27/21	Monthly On-Site IV&V Review Report
05/27/21	Monthly On-Site IV&V Review Report
06/25/21	Monthly On-Site IV&V Review Report
07/27/21	Monthly On-Site IV&V Review Report
08/25/21	Monthly On-Site IV&V Review Report
09/28/21	Monthly On-Site IV&V Review Report

Appendix F: Comment Log on Draft Report

Appendix F: Comment Log on Draft Report

DLIR DCD eCMS Project: IV&V Document Comment Log				
ID #	**Page #**	**Comment**	**Commenter's Organization**	**Accuity Resolution**
1		No DLIR comments.		
2				
3				
4				
5				
6				
7				
8				
9				
10				

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