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February 4, 2022

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

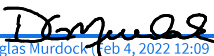
The Honorable Scott K. Saiki,  
Speaker, and  
Members of The House of Representatives  
Thirty-First State Legislature  
Hawaii State Capitol, Room 431  
Honolulu, Hawaii 96813

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 report the Office of Enterprise Technology Services received for the State's Employer-Union Health Benefits Trust Fund Benefits Administration System project.

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

Sincerely,

  
Douglas Murdock (Feb 4, 2022 12:09 HST)

DOUGLAS MURDOCK  
Chief Information Officer  
State of Hawai'i

Attachment (1)



STATE OF HAWAII  
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES  
OFFICE OF ENTERPRISE TECHNOLOGY SERVICES

# Hawaii Employer-Union Health Benefits Trust Fund Benefits Administration System (BAS)

MONTHLY IV&V STATUS & MILESTONE REPORT

December 30, 2021 | Version 1.0

REPORT FINALIZED

January 27, 2022



An independent member of  
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INTERNATIONAL



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## Document History

DATE	DESCRIPTION	AUTHOR	VERSION
01/10/22	Monthly IV&V Status Report Draft created	Julia Okinaka	0.0
01/27/22	Monthly IV&V Status Report finalized with no changes. No comments submitted in Appendix F.	Julia Okinaka	1.0



## EXECUTIVE SUMMARY

### BACKGROUND

The State of Hawaii (State), Employer-Union Health Benefits Trust Fund (EUTF) contracted Morneau Shepell Limited (now formally called LifeWorks) with their Ariel EAS technology solution for the Health Benefits Administration System Modernization Project (BAS Project) on June 1, 2020. On May 17, 2021, Morneau Shepell officially changed its company name to LifeWorks. EUTF also contracted Segal to provide project management, business process reengineering (BPR), organizational change management (OCM), and quality management. Segal's subcontractor, ICON Consulting (ICON), is responsible for data consulting and conversion.

The Office of Enterprise Technology Services (ETS) contracted Accuity LLP (Accuity) to provide Independent Verification and Validation (IV&V) services for the EUTF BAS Project. The goal of IV&V is to increase the probability of project success. The benefits of IV&V include identification of high-risk areas early and actionable recommendations.

Following IV&V's Initial Assessment Report, Monthly IV&V Status Reports are issued to update and evaluate continual project progress and performance. Pre and Post Go-live Implementation Milestone Reports will be issued prior to and after the deployment/completion of major project milestones.

The project has an incremental delivery method spread over four segments, and each segment consists of two to three intervals. The project is currently in its final build, configuration, and user acceptance testing and parallel testing. The focus of our IV&V activities for this report included the beginning of a two-month in-depth assessment of quality management and testing.

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 December 30, 2021. Refer to Appendix A: IV&V Criticality and Severity Ratings for an explanation of the ratings and Appendix E: Prior Findings Log for prior report findings.

#### PROJECT MANAGEMENT

*"Progress is impossible without change, and those that cannot change their minds cannot change anything."*

- George Bernard Shaw

# PROJECT ASSESSMENT

AS OF DECEMBER 30, 2021

## SUMMARY RATINGS

### OVERALL RATING



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

### PROGRAM GOVERNANCE



### PROJECT MANAGEMENT



### TECHNOLOGY

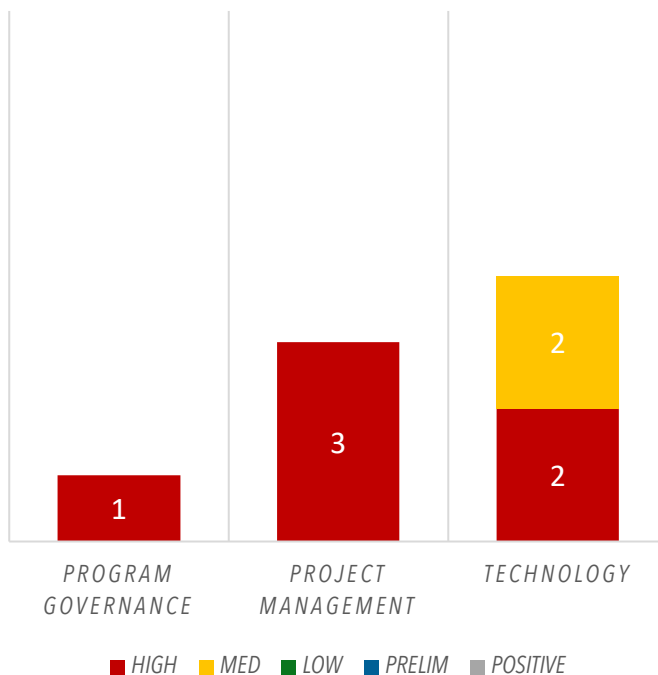


### CRITICALITY RATINGS



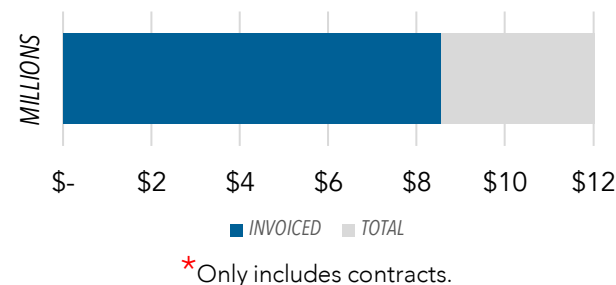
## 8 OPEN FINDINGS

SEVERITY RATINGS BY ASSESSMENT AREA

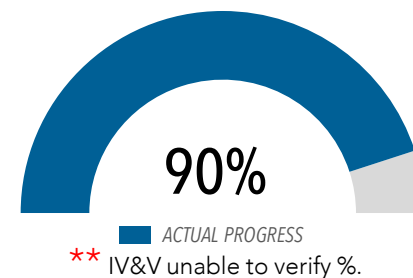


## 11 OPEN RECOMMENDATIONS

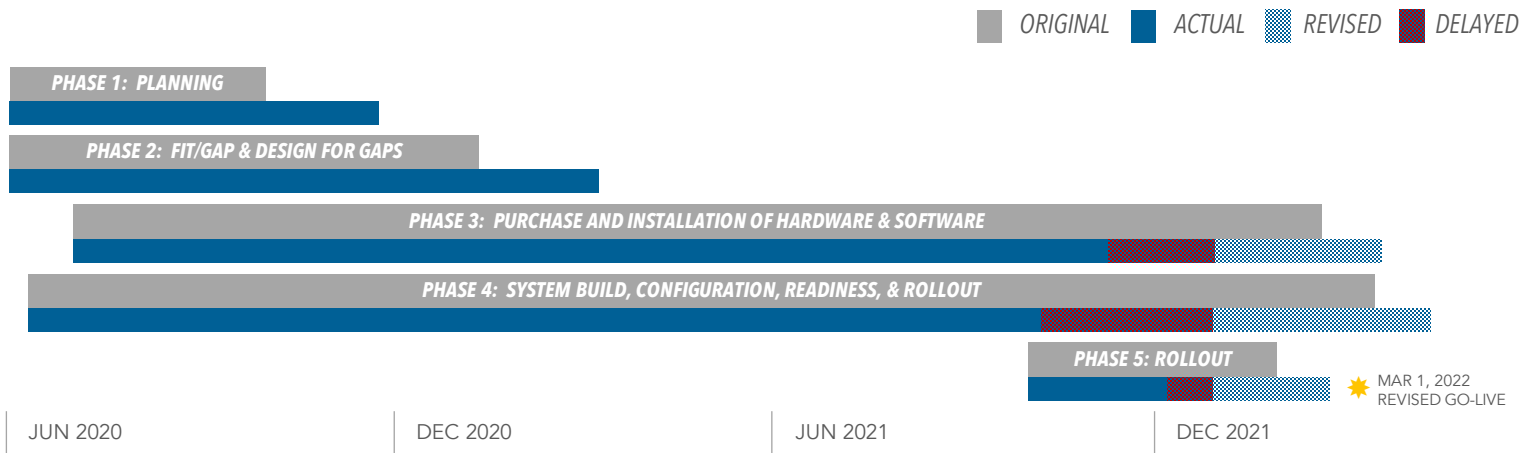
### PROJECT BUDGET\*



### PROJECT PROGRESS\*\*



## PROJECT TIMELINE\*\*\*















\*\*\* Revised detailed plan pending.



# ASSESSMENT AREA & RATINGS SUMMARY

AS OF DECEMBER 30, 2021

OCT	NOV	DEC	IV&V ASSESSMENT AREA	IV&V OBSERVATIONS
			<i>Overall</i>	<p>The project did not complete the system build and configuration milestone under the revised schedule, putting the Go-live date at risk. Immediate action is needed to determine root causes, evaluate alternative courses of action, and select the best path forward for success.</p> <p>Project Schedule: The EUTF BAS Go-live date was pushed back one month to March 1, 2022. The project is experiencing some delays under the revised schedule.</p> <p>Project Costs: Project contract costs invoiced to-date approximated \$8,600,000. Payments for activities that are rolled forward and partially completed need to be carefully considered.</p> <p>Quality: System quality and functionality concerns grow as defects and performance issues are identified in LifeWorks QA testing, EUTF UAT, and parallel testing. Quality and project metrics should be revisited, measured, and analyzed based on the current status of the project and to ensure the project continues to move forward.</p>
			<i>Program Governance</i>	<p>The Steering Committee and Board of Trustees approved the revised March 2022 Go-live date. As there are already delays under the revised timeline, additional guidance and support from project leadership is needed to understand the root cause of continuous project delays, remove barriers, guide strategic decision-making, and drive progress through accountability (Refer to finding 2021.12.PG01).</p>
			<i>Project Management</i>	<p>Improved schedule and resource management practices are needed to determine if the revised schedule is achievable as the project missed the build/configuration milestone under the new Go-live date. A root cause analysis of ongoing project delays is critical as adding more resources and meetings has not resolved the problem. EUTF and LifeWorks need to evaluate the cumulative impact of all the outstanding requirements and deliverables to determine alternative courses of action and select the best path forward for project success. Developing a realistic schedule, meeting expectations, and showing progress is paramount to maintaining project morale and boosting user confidence in the solution.</p>
			<i>Technology</i>	<p>The development and testing of remaining system functionality is four months behind and the incremental sliding of target dates negatively impacts the execution and quality of user acceptance testing. Furthermore, ongoing system development delays impact the ability to complete testing for user acceptance, employer interfaces, performance, and other key activities (Refer to finding 2021.12.IT01). EUTF and LifeWorks should decide if continuing with EUTF testing makes the most sense given the limited resources for all other outstanding tasks and full regression testing will still need to be conducted after all functionality is delivered. The timeline for remediating remaining high security vulnerabilities has been confirmed and an additional security control is being deployed and tested. EUTF and LifeWorks still need to assess the impact of all outstanding technical requirements and deliverables to determine overall solution readiness. Additional outstanding deliverables that are behind schedule include production environment completion, data derivation document, performance testing, SSO testing, QA test results, reporting database access, and updated disaster recovery documentation.</p>

# 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 any 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 each of the three major IV&V Assessment Areas. One IV&V Assessment Category improved with the deployment of the WAF. Three IV&V Assessment Categories declined due to the growing risk and impact of the schedule delays under the revised Go-live schedule. The overall rating reflects the need for stronger project management practices and need for more active involvement by Project Governance.

### AT-A-GLANCE

REVISED GO-LIVE  
approved

ACTIVE SUPPORT  
from project  
governance needed

SYSTEM  
DEVELOPMENT still  
DELAYED

OCT	NOV	DEC	PROGRAM GOVERNANCE
G	G↓	Y↑	Governance Effectiveness
G	G	G	Benefits Realization
OCT	NOV	DEC	TECHNOLOGY
Y	R	R	System Software, Hardware, and Integrations
Y↓	R	R	Data Conversion
Y	R	R	Quality Management and Testing
G	G	G	Configuration Management
Y	Y	G↓	Security
G	G	G	Deployment and Operations

OCT	NOV	DEC	PROJECT MANAGEMENT
Y↑	Y	R	Project Organization and Management
G	G↓	G↓	Requirements Management
R	R	R	Cost, Schedule, and Resource Management
Y↑	Y	R	Risk Management
G	G↓	G↓	Communications Management
G	G	G	Organizational Change Management (OCM)
G	G	G	Business Process Reengineering (BPR)
G↓	G↓	G↓	Training and Knowledge Transfer



## PROGRAM GOVERNANCE

Governance  
Effectiveness

Benefits Realization



## PROGRAM GOVERNANCE

OCT	NOV	DEC	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
			Governance Effectiveness	The Steering Committee and Board of Trustees approved the revised March 2022 Go-live date. As there are already delays under the revised timeline, additional guidance and support from project leadership is needed to understand the root cause of continuous project delays, remove barriers, guide strategic decision-making, and drive progress through accountability (Refer to finding 2021.12.PG01).	1	1	0
			Benefits Realization	Project success metrics were defined in the Project Charter, Scope, and Management Plan. Quality and project metrics should be revisited, measured, and analyzed based on the current status of the project and to ensure the project continues to move forward.	0	0	0

PROGRAM  
GOVERNANCE

Governance  
Effectiveness

Benefits Realization

FINDING #: 2021.12.PG01

STATUS: OPEN

TYPE: RISK

SEVERITY:

1

TITLE: NEED FOR ADDITIONAL SUPPORT AND GUIDANCE FROM PROJECT GOVERNANCE

**Finding:** Insufficient support and guidance from project governance may limit the project's ability to overcome current project challenges.

**Industry Standards and Best Practices:** Project Management Institute (PMI) research shows that steering committees and actively engaged executive sponsors contribute to project success. PMI Governance Practice Guide states that the role of the project governing body and sponsors is to monitor project progress, remediate escalated risks and issues, remove barriers to project success, and provide leadership in enforcing and carrying out decisions.

**Analysis:** The project has been challenged with ongoing project delays, risks, and issues. Despite risk mitigation efforts such as resource augmentation, workstream specific meetings, and project logs, the project continues to be challenged by ongoing delays. At this point of the project, additional support from the Steering Committee and project leaders is needed to help remove barriers, guide strategic decision-making, and drive progress through greater accountability.

**Recommendation:** 2021.12.PG01.R1 – *Increase project governance support, guidance, and strategic decision-making.*

- Discuss high-impact barriers/blockers and mitigation plans for critical issues with the Steering Committee.
- Evaluate how the Steering Committee members can be leveraged to remove barriers and execute mitigation plans.
- Consider establishing more frequent touchpoints with EUTF and LifeWorks project sponsors for expediated strategic decision-making, monitoring of progress, and ongoing guidance.

## PROJECT MANAGEMENT

Project Organization and Management

Requirements Management

Cost, Schedule, and Resource Management

Risk Management

Communications Management

Organizational Change Management

Business Process Reengineering

Training and Knowledge Transfer



## PROJECT MANAGEMENT

OCT	NOV	DEC	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
			Project Organization and Management	Improved schedule and resource management practices are needed to determine if the revised schedule is achievable as the project missed the build/configuration milestone under the new Go-live date. A root cause analysis of ongoing project delays is critical as adding more resources and meetings has not resolved the problem (Refer to Finding 2021.12.IT01 and 2021.02.PM01). EUTF and LifeWorks need to evaluate the cumulative impact of all the outstanding requirements and deliverables to determine alternative courses of action and select the best path forward for project success.	0	1	3
			Requirements Management	The status of requirements are tracked in ALM and Smartsheets. Although the project is currently in Segment 4 UAT and parallel testing, concerns with defects, performance, and delayed functionality is delaying the approval of requirements. With 60 days left to Go-live, approximately 30% of requirements have been approved by EUTF.	0	0	0
			Cost, Schedule, and Resource Management	Project contract costs invoiced to-date approximated \$8,600,000. Payments for activities that are rolled forward and partially completed need to be carefully considered. The EUTF BAS Go-live date was pushed back one month to March 1, 2022. The project is experiencing some delays under the revised schedule (Refer to finding 2021.02.PM01).	0	1	0

## PROJECT MANAGEMENT

Project Organization and Management

Requirements Management

Cost, Schedule, and Resource Management
















Risk Management

Communications Management

Organizational Change Management

Business Process Reengineering

Training and Knowledge Transfer

OCT	NOV	DEC	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
			Risk Management	As the schedule to meet the revised Go-live date is aggressive, it is critical to communicate risks timely so mitigation strategies and decisions can be determined and executed in an expedited manner.	0	1	0
			Communications Management	The delivery of clear and timely communications to project stakeholders about ongoing risks and the impact of these risks to interim and overall project activities is critical. The root cause of numerous delays still have not been effectively communicated and detailed timelines are not amended or discussed timely.	0	0	0
			Organizational Change Management (OCM)	The project continues to gather internal stakeholder feedback through surveys and change champion meetings. Developing a realistic schedule, meeting expectations, and showing progress is paramount to maintaining project morale and boosting user confidence in the solution. Carriers and employers are being notified of the revised schedule, and communications will need to be swift and clear so they can adequately prepare for changes in their operations impacted by the Ariel solution.	0	0	0
			Business Process Reengineering (BPR)	Standard Operating Procedures continue to be developed and reviewed with EUTF to support the Financial Services Branch with changes in their operations.	0	0	0
			Training and Knowledge Transfer	Training was delivered by LifeWorks for the reporting database; however, EUTF is still waiting for access to ensure it meets their needs and can support them in data validation efforts. Training for other delayed functionality is still pending. External stakeholder training is in planning and development by EUTF's Ariel Training and Communications team.	0	0	0

## TECHNOLOGY

System Software,  
Hardware, and  
Integrations

Data Conversion

Quality Management  
and Testing

Configuration  
Management

Security

Deployment and  
Operations



## TECHNOLOGY

OCT	NOV	DEC	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
			System Software, Hardware, and Integrations	The development and testing of remaining system functionality is four months behind and it is unclear if the root cause of these delays is foundational project management or other software and technical challenges. Ongoing system development delays impact the ability to complete testing for user acceptance, employer interfaces, performance, and other key activities (Refer to finding 2021.12.IT01). EUTF and LifeWorks should decide if continuing with EUTF testing makes the most sense given the limited resources for all other outstanding tasks and full regression testing will still need to be conducted after all functionality is delivered. EUTF and LifeWorks still need to assess the impact of all outstanding technical requirements and deliverables to determine overall solution readiness. Progress for employer and carrier interface testing is delayed and will be continued in January.	1	1	1
			Data Conversion	EUTF and Lifeworks continue to work together to resolve data conversion, extraction, and validation issues. Weekly data conversion meetings are held with EUTF, LifeWorks, Segal, Vitech, and ICON. Data Cycle 4 conversion will commence in January 2022.	0	1	0

## TECHNOLOGY

System Software,  
Hardware, and  
Integrations

Data Conversion

Quality Management  
and Testing

Configuration  
Management

Security

Deployment and  
Operations

OCT	NOV	DEC	IV&V ASSESSMENT CATEGORY	IV&V OBSERVATION	FINDINGS		
					NEW	OPEN	CLOSED
Y	R	R	Quality Management and Testing	Client UAT commenced two months ago, and all system functionality still has not been delivered. It is unclear how the delays impact the execution and quality of testing. Full regression testing will still need to be performed after system development is complete. EUTF should ensure that testing is conducted in a manner to determine if the Ariel solution meets the intended technical, functional, and business requirements that were originally defined by the project.	0	1	2
G	G	G	Configuration Management	No significant updates from the prior report.	0	0	0
Y	Y	G↓	Security	The timeline for remediating remaining high security vulnerabilities has been confirmed. EUTF and LifeWorks have approved deployment and testing of a web application firewall as an additional security control against current and future security vulnerabilities. Monthly security scans will continue to be provided for EUTF review.	0	1	0
G	G	G	Deployment and Operations	The next 60 day Go/No-go decision checkpoint is scheduled for the first week of January. The transition calendar and plan are being updated to reflect and account for the revised Go-live date.	0	0	0

## TECHNOLOGY

System Software,  
Hardware, and  
Integrations

Data Conversion

Quality Management  
and Testing

Configuration  
Management

Security

Deployment and  
Operations

FINDING #: 2021.12.IT01

STATUS: OPEN

TYPE: ISSUE

SEVERITY:

1

### TITLE: ONGOING SYSTEM DEVELOPMENT DELAYS IMPACTING OVERALL PROJECT

**Finding:** System build and configuration was not completed. This is impacting the execution of other project activities and putting the overall project at risk.

**Industry Standards and Best Practices:** Institute of Electrical and Electronics Engineers (IEEE) 15288-2015 discusses the technical management processes including system implementation.

**Analysis:** Delivery of the final Segment 4 functionality was scheduled to be completed in September 2021 but was continuously delayed and not completed by the revised target date of December 31, 2021. Overtasked resources, turnover in staffing, and delays in data conversion may have been contributing factors to the delays. Throughout the project, requirements were deferred, rescheduled, and reassigned to specific segments as ways to minimize schedule impacts. Additional resources and meetings were also added to better coordinate activities and mitigate delays. Despite these efforts, even the revised delivery date for completing system build and configuration was not achieved. It is unknown how many requirements are still open and if the delays negatively impact the execution and quality of testing. This is also impacting the ability to complete testing for user acceptance, employer testing, performance, and other key activities, and ultimately successful project completion. The table below illustrates the timeline of requirements remaining in development and QA testing:

Date	Requirements pending
September 6, 2021	Almost 400 requirements
October 1, 2021	Over 350 requirements
November 1, 2021	Over 200 requirements
December 3, 2021	Almost 90 requirements
January 4, 2022	Unknown due to the change in reporting and tracking approach

**Recommendation:** 2021.12.IT01.R1 – *The project should quantify remaining project tasks, develop a realistic build and configuration schedule, and evaluate alternative courses of action based on realistic schedules and resources.*

- Provide a better status of system development for the remaining, incomplete functionality.
- Develop a detailed plan with assigned resources to complete the remaining build and configuration tasks.
- Gather the team to perform a root cause analysis including defining the problem, brainstorming possible causes, analyzing cause and effects, and developing a plan to address the root cause of the problem. Reassess the schedule based on the time and resources required to implement the solution.



# Appendix A: IV&V Criticality and Severity Ratings

## IV&V CRITICALITY AND SEVERITY RATINGS

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

### Criticality Rating

The criticality ratings are assessed based on consideration of the severity ratings of each related risk and issue within the respective IV&V Assessment Area and IV&V Assessment Category, the overall impact of the related findings to the success of the project, and the urgency of and length of time to implement remediation or risk mitigation strategies. Arrows indicate trends in the project assessment from the prior report 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.

#### TERMS

##### RISK

An event that has not happened yet.

##### ISSUE

An event that is already occurring or has already happened.



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
SAMLv2.0	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: IV&V Monthly Status

### MAIN IV&V ACTIVITIES AND ACCOMPLISHMENTS

MAIN IV&V ACTIVITIES AND ACCOMPLISHMENTS
Participated in Hawaii EUTF project management, data conversion, technical, carrier/employer, joint stand-up, training and communications, and UAT defect meetings
Attended WAF Go/No-go decision meeting
Reviewed vulnerability scan and penetration test results
Presented at EUTF Board of Trustees Meeting
Reviewed and commented on Steering Committee and Board of Trustee presentations
Finalized November Monthly IV&V Status Report and submitted Draft December 2021 Monthly IV&V Status Report

### KEY UPCOMING IV&V DELIVERABLES

KEY IV&V DELIVERABLES	DRAFT DUE DATE	DRAFT SUBMITTED	FINAL SUBMITTED
December 2021 Monthly IV&V Status Report	01/10/22	01/10/22	01/27/22

### PRIOR IV&V APPROVED DELIVERABLES

DELIVERABLE	AS OF DATE	APPROVED DATE
IV&V Project Management Plan (IVVP)	N/A	07/22/20
Initial Assessment Report	06/26/20	07/29/20
July 2020 Monthly IV&V Status Report	07/24/20	08/20/20
August 2020 Monthly IV&V Status Report	08/25/20	09/25/20
September 2020 Monthly IV&V Status Report	09/25/20	10/19/20

## PRIOR IV&V APPROVED DELIVERABLES (CONTINUED)

DELIVERABLE	AS OF DATE	APPROVED DATE
October 2020 Monthly IV&V Status Report	10/27/20	11/25/20
November 2020 Monthly IV&V Status Report	11/25/20	12/14/20
December 2020 Monthly IV&V Status Report	12/22/20	02/02/21
January 2021 Monthly IV&V Status Report	01/26/21	02/25/21
February 2021 Monthly IV&V Status Report	02/23/21	03/31/21
March 2021 Monthly IV&V Status Report	03/23/21	04/28/21
April 2021 Monthly IV&V Status and Milestone Report	04/27/21	06/04/21
May 2021 Monthly IV&V Status and Milestone Report	05/26/21	06/28/21
June 2021 Monthly IV&V Status Report	06/23/21	07/26/21
July 2021 Monthly IV&V Status Report	07/27/21	08/31/21
August 2021 Monthly IV&V Status Report	08/27/21	10/06/21
September 2021 Monthly IV&V Status Report	09/30/21	11/01/21
October 2021 Monthly IV&V Status Report	10/27/21	12/07/21
November 2021 Monthly IV&V Status Report	11/30/21	01/03/22



## Appendix D: Interviews, Meetings, and Documents

### INTERVIEWS

DATE	INTERVIEWEE
-	None

### MEETINGS

DATE	MEETING DESCRIPTION
12/01/21	EUTF - Billing Conversion Data Touchpoint
12/02/21	EUTF - Joint Stand-up Meeting
12/02/21	EUTF - Joint Weekly Project Team Meeting & PM Touchpoint
12/03/21	EUTF - Billing Conversion Data Touchpoint
12/06/21	EUTF/ICON/MS Data Conversion Weekly Meeting
12/06/21	EUTF - Joint Weekly Project Team Meeting & PM Touchpoint
12/06/21	Status of EUTF BAS Project
12/06/21	Training and Communication Planning Meeting
12/06/21	EUTF - UAT Defect Status and Review
12/07/21	EUTF - Joint Stand-up Meeting
12/08/21	EUTF - BAS Joint Monthly Steering Committee Meeting
12/08/21	EUTF - Biweekly Technical Meeting
12/09/21	EUTF - Joint Weekly Project Team Meeting & PM Touchpoint
12/13/21	EUTF - Billing Conversion Data Touchpoint

## MEETINGS (CONTINUED)

DATE	MEETING DESCRIPTION
12/13/21	EUTF - Joint Weekly Project Team Meeting & PM Touchpoint
12/13/21	Training and Communication Planning Meeting
12/13/21	EUTF - UAT Defect Status and Review
12/13/21	December IV&V Update meeting
12/14/21	EUTF - Joint Stand-up Meeting
12/15/21	Monthly Meeting with IV&V and PMs
12/15/21	EUTF Bi-Weekly Technical Meeting PREP
12/16/21	EUTF - Joint Weekly Project Team Meeting & PM Touchpoint
12/16/21	EUTF - Biweekly Technical Meeting
12/20/21	EUTF/ICON/MS Data Conversion Weekly Meeting
12/20/21	EUTF - Joint Weekly Project Team Meeting & PM Touchpoint
12/20/21	Training and Communication Planning Meeting
12/20/21	EUTF - UAT Defect Status and Review
12/21/21	EUTF - Joint Stand-up Meeting
12/21/21	EUTF Board of Trustees Meeting
12/28/21	EUTF WAF Go/No-go Meeting
12/30/21	EUTF - Joint Weekly Project Team Meeting & PM Touchpoint

## DOCUMENTS

TYPE	DOCUMENT
Morneau Shepell Proposal	EUTF BAS RFP 20-002 - Morneau Shepell BAFO Response to BAS Project Oral Presentation Demo Question Requests - FINAL
Request for Proposal	State of Hawaii EUTF BAS RFP No. RFP-20-001 for Project Management and Consulting Services (Release Date 09/25/19)
Segal Proposal	BAFO for RFP No. RFP-20-001 for Project Management and Consulting Services (Effective 03/16/20)
Request for Proposal	State of Hawaii ETS RFP-19-010 EUTF BAS IV&V
Accuity Proposal	Accuity LLP EUTF IVV Proposal RFP-19-010 FINAL
Contract	Morneau Shepell Limited Contract (effective 06/01/20)
Contract	Segal Company Contract (effective 06/01/20)
Contract	Accuity Contract (effective 06/01/20)
Budget	New BAS Budget Worksheet
Project Management	Hawaii EUTF Morneau Shepell Project Kick-Off – FINAL (06/04/20)
Project Management	EUTF – Weekly Project Team Status – 2021-12-06
Project Management	EUTF – Weekly Project Team Status – 2021-12-13
Project Management	EUTF – Weekly Project Team Status – 2021-12-20
Project Management	EUTF – Weekly Project Team Status – 2021-12-27
Project Management	20211130 Segal Monthly Status Report
Project Management	20211206 Segal EUTF Status Report
Project Management	20211213 Segal EUTF Status Report
Project Management	20211220 Segal EUTF Status Report
Project Management	Functionality Not Available – Master List 20211213
Project Governance	EUTF – Joint Steering Committee Meeting – 2021-12-08
Project Governance	EUTF Board BAS Update 20211221 Final

## DOCUMENTS (CONTINUED)

TYPE	DOCUMENT
Risk and Issues	EUTF – CRAIDL Log
Schedule	Hawaii (EUTF) – BAS Work Plan
Deliverable	Hawaii EUTF – BAS Implementation - Charter, Scope, and Management Plan
Deliverable	EUTF Quality Management Plan_2020.10.14
Disaster Recovery	Disaster Recovery Plan_v2.0
Performance	Performance Test Plan_v0.1
Security	2021-10-22 ee-eutf-bat.uat Detailed Scan Report
Security	2021-10-22 ee-eutf-cfg.uat Detailed Scan Report
Security	2021-10-25 ap2-eutf-bat.uat Detailed Scan Report
Security	2021-10-25 apt2-eutf-cfg.uat Detailed Scan Report
Security	2021-10-25 ap2-eutf-trn.uat Detailed Scan Report
Security	2021-10-26 ep2-eutf-.bat.uat Detailed Scan Report
Security	2021-10-26 ep2-eutf-trn.uat Detailed Scan Report
Security	2021-11-18 ee-eutf-bat.uat Detailed Scan Report
Security	2021-11-18 ee-eutf-cfg.uat Detailed Scan Report
Security	2021-11-17 ep2-eutf-bat.uat Detailed Scan Report
Security	2021-11-17 apt2-eutf-cfg.uat Detailed Scan Report
Security	2021-10-25 ee-eutf-trn.uat Detailed Scan Report
Security	2021-10-26 ep2-eutf-cfg.uat Detailed Scan Report
Security	EUTF-Summary-Report-Vulnerabilities
Transition	Transition Calendar
Testing	Parallel Testing Plan 20211025



## *Appendix E: Prior Findings Log*

Appendix E: 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
Quality Management and Testing	2021.11.IT01	Issue	High	High	System configuration and data conversion delays are impacting testing approach and reducing the effectiveness of testing.	The project has been challenged by ongoing delays in build and configuration, system testing by LifeWorks, and data conversion. To move forward with Segment UAT and parallel testing without impacting the testing timelines and February 2022 Go-live date, LifeWorks and EUTF agreed numerous times to begin testing without meeting UAT prerequisite criteria. Most recently, EUTF and LifeWorks agreed on an approach to begin parallel testing without accurate employment and billing data, and to test retroactive calculations in the UAT environment. Furthermore, due to pressures to meet milestone deadlines, there has been continuous overlap between the system testing and UAT, increasing the risk of finding defects post-production.	2021.11.IT01.R1	Lifeworks and EUTF should ensure the phased testing approach provides adequate and complete testing results to determine whether the system is ready for Go-live.	<ul style="list-style-type: none"><li>LifeWorks and EUTF should work together to determine adequate time and resources are available to ensure the complete Ariel solution is tested as a whole.</li><li>LifeWorks and EUTF should develop regression testing plans and scenarios to test the complete system after all functionality and data is delivered.</li><li>EUTF should ensure that testing is conducted in a manner to determine if the Ariel solution meets the intended technical, functional, and business requirements that were originally defined by the project.</li></ul>	Open	12/30/21: UAT and Parallel testing has been challenging for EUTF and testing activities are taking longer than expected due to performance issued, defects, and unfamiliarity with the system. Furthermore, build and configuration was not completed by the revised target date of 12/31/21, so EUTF continues to test an incomplete solution.  IV&V will continue to assess the effectiveness of testing and impacts on quality management.		
Risk Management	2021.07.PM01	Issue	High	High	Current risk management processes to identify, communicate, and escalate risks are ineffective resulting in the inability to take timely corrective action.	The UAT Testing Strategy for Segment 2 states that the successful completion of the internal LifeWorks segment testing is an entry criteria to maximize the effectiveness of EUTF UAT; however, EUTF started UAT prior to the completion of Lifeworks' system testing. The purpose of segment testing is to ensure that Ariel is working as intended and any identified defects are addressed prior to the solution being delivered. LifeWorks segment testing is over one month behind its target completion date of April 29, 2021, with 54 requirements still pending segment testing. Without completing Segment 2 testing, Segment 2 functionality was not validated leading to the increased risk of design and functionality issues.	2021.07.PM01.R1	Increase the rigor and leadership of managing risk management processes.	<ul style="list-style-type: none"><li>Reinforce that open and transparent discussions of risks and issues is healthy and critical for overall project success. Involve EUTF early in the decision-making and selection of risk response strategies.</li><li>Conduct recurring internal meetings with workstream leads and clearly define their responsibilities in identifying, escalating, and conducting root cause analysis of new and existing risks.</li><li>Actively communicate the risks and impacts of not meeting project milestones and deadlines so project members clearly understand how to prioritize their workloads and hold their teams accountable for completing tasks.</li></ul>	Open	08/27/21: Accuity decreased the severity rating from Level 3 (High) to Level 2 (Moderate) as LifeWorks made notable effort to proactively identify and communicate potential project delays, risks, and issues in August. Project leadership is improving its handling and communication of project risks for more timely discussion and decision-making. The LifeWorks PM and Deputy PM have started to effectively ask questions and discuss the impacts of not meeting project milestones.  09/30/21: Project risks and concerns requiring immediate attention continue to be discussed with more urgency as Go-live approaches. More frequent meetings and tracking tools facilitate the effective communication and management of risks.  10/27/21: The schedule for the next three months is aggressive, and the risk and impact of current project delays on Go-live is still unclear. The ongoing evaluation of risks and whether remaining project work can be accomplished in the months leading to Go-live is critical (Refer to Finding 2021.02.PM01).  11/30/21: Accuity reverted the severity rating from Level 2 (Moderate) back to Level 3 (High). The schedule for the next two months is aggressive, and the risk and cumulative impact of current project delays on Go-live is still unclear. A thorough analysis of outstanding activities and cumulative assessment of risk on quality and the overall schedule is needed.  12/30/21: The project did not meet the most recent re-baselined deadline to complete build and configuration of remaining functionality under the revised Go-live date. As project delays are a pervasive issue, a root cause analysis is critical to determine and address the source of ongoing schedule management challenges.  IV&V will continue to monitor the communication, escalation, and management of risks.		

ASSESSMENT CATEGORY	FINDING ID	TYPE	ORIGINAL SEVERITY	CURRENT SEVERITY	FINDING	ANALYSIS	RECOMMENDATION ID	RECOMMENDATION	SUPPLEMENTAL RECOMMENDATION	FINDING STATUS	FINDING STATUS UPDATE	CLOSED DATE	CLOSURE REASON
Project Organization and Management	2021.04.PM01	Risk	Moderate	High	Need for greater coordination and control of project information, resources, tasks, and lessons learned to ensure project quality and performance.	LifeWorks has a dedicated team that includes various leads and groups with different functional area responsibilities including requirements management, build/configuration, data conversion, training, and testing. The leads and SMEs of these functional teams work together and often attend cross-functional meetings; however, as the project progresses it is becoming more apparent that there needs to be improved coordination and control of workstreams to regularly assess and ensure the quality and performance of each work stream's output. These functional teams are not only accountable for their own work streams but are accountable to each other for properly sharing information, finishing their tasks timely, and openly sharing feedback and lessons learned to improve the team's overall project delivery.	2021.04.PM01.R1	Clarify roles and responsibilities for key tasks and milestones in each workstream.	<ul style="list-style-type: none"><li>• Review project plans and hold project team members accountable for their specific responsibilities under each workstream.</li><li>• Incorporate clear and detailed procedures for roles and responsibilities related to the execution of agile-like Segment activities and Go/No-Go Criteria.</li></ul>	Open	<p>05/26/21: This was originally reported in the April 2021 IV&amp;V Monthly Report as a preliminary concern but is upgraded to a risk in May 2021. Despite additional resources added for QA, configuration, and project management, the project has continued schedule delays and miscommunication regarding UAT. A project Lessons Learned Log has been populated with feedback from surveys, change champions, and other observations; however, it has not been discussed as a team to prioritize and agree on how to implement improvements.</p> <p>06/23/21: The coordination of data conversion and carrier activities improved as those workstreams were assigned to the LifeWorks Deputy PM. Segal is also supporting EUTF data conversion activities. IV&amp;V will continue to monitor the communication and control of all other project workstreams.</p> <p>07/27/21: Although the project culture is collaborative, current project management practices could be improved in areas including cost and schedule management, risk management, and communications management. It is unclear how project leads are being held accountable for timelines and actively managing their workstreams.</p> <p>08/27/21: Accuity decreased the severity rating from Level 2 (Moderate) to Level 1 (Low) as project leads are more actively managing their areas of responsibility. Weekly recurring meetings of project workstreams are facilitating active oversight of major project activities. Better project tracking tools have also been implemented.</p> <p>09/30/21 and 10/27/21: The project team continues to improve the active management of project workstreams; however, this observation becomes even more critical and requires even more rigor as activities/deliverables continue to be delayed and upcoming milestones cannot be missed.</p> <p>11/30/21: Accuity increased the severity rating to Level 3 (High) as project milestones continue to be missed, reestablished with new targets, and delayed again for data conversion, build and configuration, LifeWorks internal testing, parallel testing, and security remediation.</p> <p>12/30/21: Improved schedule and resource management practices are needed to determine if the revised schedule is achievable as LifeWorks missed the build/configuration milestone critical to meet the revised Go-live date. A root cause analysis of ongoing project delays is critical as adding more resources and meetings has not resolved the problem.</p> <p>IV&amp;V will continue to assess project management activities and encourage more active management of project tasks and coordination between workstreams.</p>		



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	2021.04.IT01	Risk	Moderate	Moderate	Need to improve the management of data conversion activities and coordination of all parties with data conversion responsibilities.	The successful and complete migration of data is critical to a successful project and requires strong cross-functional team communication and coordination of all data conversion resources. The overall status of data conversion is unclear and there is a need to improve the management of data conversion activities and coordination of responsible parties. Data Conversion Cycle 1 results were not formally approved and although Data Conversion Cycle 2 is in progress, it is unclear if they are on track to meet Data Conversion Cycle 2 objectives or completion by May 10, 2021. Furthermore, the data reconciliation process proposed by ICON is still pending finalization. The UAT environment penetration and vulnerability scan results are still pending remediation, which may delay the loading of Data Conversion Cycle 2 data.	2021.04.IT01.R1	Appoint a dedicated Data Conversion Management Lead.	<ul style="list-style-type: none"><li>• Appoint a dedicated Data Conversion Management Lead to actively manage all aspects of the data conversion effort including coordination of LifeWorks, ICON, and EUTF data conversion activities.</li><li>• Assign this lead the responsibility of providing weekly data conversion status reports with metrics that report on the status and health of data conversion activities.</li><li>• Develop a formalized Data Conversion acceptance process for the remaining cycles with defined acceptance criteria.</li></ul>	Open	<p>05/26/21: Data Conversion Cycle 2 nears completion but is experiencing data derivation challenges related to employee status. An additional LifeWorks project manager resource was added to support the coordination of data conversion activities. Segal has also communicated plans to add support to managing data conversion activities. The importance of coordinating data conversion work was evident again when Segment 2 UAT was delayed due to these issues with data conversion impacting the availability of the UAT environment.</p> <p>06/23/21: The LifeWorks Deputy PM was assigned to be the lead coordinator for data conversion. Segal is also playing a larger role in supporting EUTF data conversion activities. Data conversion activities are being tracked and managed through a log. A data conversion dashboard to show the overall status is still pending.</p> <p>07/27/21: The project faces continued schedule delays in data conversion, specifically for billing records. Although sample billing data extracts were provided, EUTF and Vitech are still struggling to provide billing records to LifeWorks, which may also impact the project timeline.</p> <p>08/27/21: Although EUTF and Vitech delivered billing records in August, the time to review, refine, and test the billing extracts is very compressed. A formalized Data Conversion acceptance process for Data Cycle 2 and 3 was not developed. The coordination of data conversion has improved, however, still remains a cautious area that needs strong oversight.</p> <p>09/30/21: After continuous feedback and rework, all Data Cycle 3 files were finally delivered, including billing and payment extracts. Data Conversion activities are still critical and the time for LifeWorks to perform data validation and recalculations has been greatly compressed. Weekly data conversion meetings and bi-weekly Data Cycle 3 check-in meetings help manage the coordination of these vital activities.</p> <p>10/27/21: Due to issues with Data Cycle 3 billing records, another round of revised billing records is needed to perform on-going Segment 4 UAT and parallel testing is scheduled to begin in November 2021. Meetings are being held with LifeWorks, EUTF, and Vitech to analyze the data needs and develop a timeline for remediating the billing data issues.</p> <p>11/30/21 and 12/30/21: There are still unresolved Data Cycle 3 issues for critical billing and employment data. Another round of revised billing records was provided; however, questions continue to arise from data validation activities causing further delays. The multiple revisions of Data Cycle 3 are having severe impacts on project resources and effectiveness of UAT.</p> <p>IV&amp;V will continue to assess the management of data conversion activities.</p>		

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
Security	2021.04.IT02	Issue	Moderate	Moderate	LifeWorks is not following their patch deployment and vulnerability management policies and procedures for remediation in the non-production environments.	LifeWorks's Vulnerability Management Program v1.09b outlines their practices to perform monthly network vulnerability and penetration scans. Based on the scans, system administrators schedule a time to fix vulnerabilities based on the overall risk rating with critical and high risks addressed as quickly as possible in an ad-hoc fashion. The initial vulnerability and penetration test scans were completed on March 4, 2021, and MS drafted a Security Assessment Report which included recommended remediations. LifeWorks has subsequently missed multiple dates to complete remediation with the original target date of March 24, 2021.	2021.04.IT02.R1	LifeWorks align project practices with their patch deployment and vulnerability management policies and procedures.	When the project is unable to follow their vulnerability management policies and procedures, LifeWorks should follow standard risk management best practices including client escalation and risk acceptance processes.	Open	05/26/21: Accuity decreased the severity rating from Level 2 (Moderate) to Level 1 (Low) as LifeWorks worked diligently to address security concerns and is now following their patch and vulnerability management policies and procedures. Interim remediation controls were put in place, and full vulnerability remediation is scheduled for completion by August 2021. Bi-monthly technical meetings have been implemented to discuss security concerns on a more regular basis.		
							2021.04.IT02.R2	The vulnerability management program should include specific target timeframes for remediation, and clear client notification and escalation procedures.	In a SaaS hosting model, LifeWorks should include clear notification and escalation procedures including what scenarios and risks would require a client risk assessment, risk acceptance, or risk exception. In addition, the current program should clearly define target remediation timelines as "as quickly as possible in an adhoc fashion" could result in different expectations.		06/23/21: LifeWorks is running and providing monthly security scans. Interim remediation controls were put in place and LifeWorks is targeting to complete remediation of security vulnerabilities by August 2021.		
							2021.04.IT02.R3	Reevaluate IT project resource needs and acquire additional resources.	As the same limited IT resources are being leveraged for both security remediation and build/configuration, reevaluate the need for additional IT resources.		07/27/21: Two of the three remaining security vulnerabilities targeted for completion by August 2021 are delayed and under assessment with one still targeted for remediation before the end of next month.		
											08/27/21: The security rating increased from Level 1 (Low) to (Moderate) as the remediation of outstanding security vulnerabilities for the Azure environments continued to slip and the potential downstream project impacts become more critical due to the fast approaching Go-live. Due to an incorrectly logged ticket, the security vulnerability was not resolved for the Admin, Employer, and Carrier Portals by the agreed target date.		
											09/30/21: As a result of numerous remediation date misses, IV&V has added an additional recommendation to address the need for specific target timeframes and client notification procedures. In addition, LifeWorks clarified that the baseline security vulnerabilities are not new or isolated to the Azure environment or the EUTF build. The clarification of the vulnerability management program is important as LifeWorks' escalation of existing security vulnerabilities to their senior management did not prevent further slippage in meeting security remediation deadlines.		
											10/27/21: LifeWorks informed EUTF that they were updating their vulnerability management program to include timelines for remediation. As additional security vulnerabilities were identified in the October scans, an evaluation should be conducted to determine if there are adequate resources to address all security and build/configuration activities within the project timeline.		
											11/30/21: The timeline for remediating remaining high security vulnerabilities is still unknown. LifeWorks is investigating the implementation of a web application firewall as an additional security control against current and future security vulnerabilities.		
											12/30/21: EUTF and LifeWorks agreed to deploy and test the web application firewall (WAF) as an additional security control against current and future security vulnerabilities. The timeline for remediating remaining high security vulnerabilities has been confirmed.		
											IV&V will continue to monitor the remediation of security vulnerabilities and the impact on the project timeline.		

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Cost, Schedule, and Resource Management	2021.02.PM01	Issue	Moderate	High	Current schedule delays may impact the overall project timeline.	LifeWorks has schedule management processes in place to report and track schedule variances. Furthermore, the project already proactively identified and actively reports on project risks related to the pace of intervals, insufficient time, and resources available to build and configure all EUTF requirements, and concern that complex functions and features are not being built early enough to allow for sufficient testing and quality reviews. However, even with these schedule management processes in place, the project continues to experience delays which may impact the overall project timeline and rigid Go-live date of February 1, 2022: <ul style="list-style-type: none"><li>• The project is experiencing some delays including build and configuration for Interval 4, data conversion, environment set up, and LifeWorks Segment 1 testing.</li><li>• Requirements tagged to specific intervals continue to be deferred to later intervals. Although the deferral of project requirements were expected in earlier intervals as LifeWorks gained a clearer understanding of EUTF needs and expectations, requirements tagged to Interval 4 continue to be tagged to later intervals.</li><li>• The RTM requirements related to reports, communications, data interfaces, and workflows have not been fully identified and assigned to intervals so the level of effort for the overall schedule cannot be planned at this time.</li><li>• Data conversion for certain records continues to be delayed due to the complexity of the billing data and reliance on the current EUTF BAS Vendor to assist with extraction and correction to data extracts; and need for EUTF resources to map and resolve data extraction issues.</li></ul>	2021.02.PM01.R1	Increase schedule management control activities.	<ul style="list-style-type: none"><li>• Increase the rigor related to task and schedule delays including root cause analysis, discussions of mitigation plans, and reviews of mitigation tasks effectiveness to ensure schedule delays are timely addressed.</li><li>• Regularly reassess and readjust the project schedule estimates and assumptions.</li><li>• Consider all options for mitigating risk including adding resources, performing work in parallel, redistributing work in future development intervals, and reprioritizing remaining work.</li></ul>	Open	03/23/21: LifeWorks made some progress in addressing certain project delays and trying to move up requirements earlier to address risks related to the pace of intervals and balance of functionality. However, other activities are slipping including training and testing activities for Segment 2. It is too early to determine if requirements tagged to Interval 5 will be completed as planned or if a significant number will need to be deferred. More formalized processes need to be performed to ensure schedule delays are timely identified and addressed.		
						Greater attention and rigor to schedule delays is needed to ensure that schedule delays do not impact the overall project timeline and success of the project.	2021.02.PM01.R2	Complete assessment of current delays on the overall project schedule.	<ul style="list-style-type: none"><li>• Evaluate whether remaining project work can be accomplished in the months leading to Go-live and clearly communicate to all project stakeholders the impact of any delays on other workstreams.</li><li>• Set realistic and achievable dates based on the availability of project resources.</li><li>• Consider the impact of schedule management mitigation activities on quality.</li></ul>		04/27/21: LifeWorks has begun to make improvements in schedule management; however, the project continues to have numerous delays outlined in the April 2021 IV&V Monthly Status and Milestone Report. For the delay of XpertDoc, LifeWorks presented a mitigation plan including adding three additional QA resources to get back on track for Interval 5 and Segment 2 UAT. LifeWorks has begun to highlight late activities in the weekly status report. More formalized schedule management control activities are still needed across project workstreams.		

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											<p>10/27/21: The remaining three months of the project are aggressive with the impact of current project delays on Go-live still unknown. The inability to upload revised billing extracts will jeopardize parallel testing targeted to begin on November 15, 2021. Furthermore, although LifeWorks has added additional resources to their internal QA team, there are currently still almost 200 requirements left in development and/or internal QA testing status. Limited IT resources have caused the delayed remediation of security vulnerabilities and the build/configuration of other technical functionality (Refer to finding 2021.04.IT02).</p> <p>11/30/21: The project team is still committed to a February 2022 Go-live; however, schedule delays and issues during parallel testing execution are putting the schedule at risk. EUTF and LifeWorks still need to assess the impact of all outstanding activities, requirements, and deliverables to determine overall solution readiness. Alternative Go-live options should be thoroughly analyzed and discussed early enough to allow sufficient communication to all project stakeholders.</p> <p>12/30/21: The EUTF BAS Go-live date was pushed back one month to March 1, 2022. A detailed project schedule and resource plan for the revised timeline is still pending, and revised dates under the new target Go-live have already been missed.</p> <p>IV&amp;V will continue to assess these schedule management control activities.</p>		
Quality Management and Testing	2021.05.IT01	Risk	Moderate	Moderate	Segment 2 testing by LifeWorks is not following the UAT Testing Strategy which may impact overall system quality and the effective execution of UAT.	The UAT Testing Strategy for Segment 2 states that the successful completion of the internal LifeWorks segment testing is an entry criteria to maximize the effectiveness of EUTF UAT; however, EUTF started UAT prior to the completion of Lifeworks' system testing. The purpose of segment testing is to ensure that Ariel is working as intended and any identified defects are addressed prior to the solution being delivered. LifeWorks segment testing is over one month behind its target completion date of April 29, 2021, with 54 requirements still pending segment testing. Without completing Segment 2 testing, Segment 2 functionality was not validated leading to the increased risk of design and functionality issues.	2021.05.IT01.R1	Lifeworks to align segment testing execution to UAT Testing Strategy.	<ul style="list-style-type: none"> <li>LifeWorks and EUTF should work together to evaluate the risks associated with not following UAT Testing Strategy against the need to adhere to the project timeline.</li> <li>Develop and commit to realistic timelines to address project execution issues considering the availability of LifeWorks and EUTF resources.</li> </ul>	Closed	<p>06/23/21: Segment 2 testing by LifeWorks was completed after user acceptance testing (UAT) was in progress. The Segment 3 UAT Testing Strategy was provided which also includes the completion of Internal MS segment testing as an entry criteria to UAT. LifeWorks stated that additional resource and schedule adjustments have been made to get the project back on track by July 23, 2021, in time for Segment 3 training and UAT.</p> <p>07/27/21: After initial delays and challenges, Segment 2 UAT commenced; however, parts of Segment 2 UAT were postponed and merged with Segment 3 UAT. LifeWorks' internal testing was delayed for Segment 3 and was not completed prior to Segment 3 training for EUTF UAT staff. Incomplete and rushed testing by LifeWorks could result in quality issues and more defects identified during UAT.</p> <p>08/27/21: After Segment 2 was postponed, Segment 2 and Segment 3 UAT commenced simultaneously. The UAT is in progress and defects are being actively reported and managed for resolution.</p>	8/27/2021	Closed as Segment 2 testing has begun and the number of defects identified is reasonable and the severity level are non-critical.
Quality Management and Testing	2021.01.IT01	Risk	Moderate	Moderate	Insufficient testing and quality processes may impact the effectiveness of system demonstrations, and client confidence and satisfaction.	Periodic system demonstrations are one method for LifeWorks to share what functionality has been completed during the current interval. The requirements being demonstrated should be completely configured, tested, documented, and reviewed in advance of the system demonstration. If done successfully, system demonstrations not only help verify requirements and design, but also build confidence and customer satisfaction. The following problems were observed with the system demonstrations: <ul style="list-style-type: none"> <li>Interval 1 and 2 functionalities were demonstrated through a combination of slideshows and live system walkthroughs. Based on feedback received from EUTF, Interval 3 functionalities were demonstrated in the live system; however, there were multiple system errors and problems with prepared sample transactions and data.</li> <li>Inability to show completeness of configuration to meet 100% of completed interval requirements.</li> <li>Testing and quality processes did not identify the issues encountered during the system demonstrations.</li> <li>Lack of a formal process to record incidents and problems during the demonstration, identify root causes, and track their resolution.</li> <li>The inability to clearly track issues to resolution in a timely manner may negatively impact client confidence.</li> </ul>	2021.01.IT01.R1	Evaluate testing and quality processes.	<ul style="list-style-type: none"> <li>Use quality assurances processes to analyze results and issues to identify the root cause, improve tracking of issues to system functionality/requirements, make appropriate corrective actions, and record lessons learned.</li> <li>LifeWorks should review the demonstration results including anomalies encountered and identify follow-up actions.</li> <li>The project team should conduct a project retrospective after each interval demonstration to facilitate practical steps for improvement and promote improved stakeholder buy-in and confidence.</li> </ul>	Closed	<p>02/23/21 and 03/23/21: LifeWorks discussed the challenges associated with the system demonstrations at the February and March Steering Committee meetings. A more formalized analysis needs to be conducted to identify the root causes and track the issues to ensure appropriate corrective actions are taken. The risk has been added to the project risk log for tracking and monitoring.</p> <p>04/27/21 and 05/26/21: LifeWorks started to capture follow-up items and issues in a log to facilitate the tracking and resolution of items. Although the project is doing a better job of tracking items to be redemonstrated, the root causes are not being identified to prevent future errors or challenges.</p> <p>06/23/21 and 07/21/21: The project documents lessons learned in a log and tracks demonstration follow-up items in bi-weekly Joint Stand-up meetings. IV&amp;V has seen some improvement in the tracking of issues, defects, and follow-up items; however, due to delayed and rushed LifeWorks segment testing, quality is still a concern. Project retrospectives are not conducted after each interval.</p> <p>08/27/21: LifeWorks continued to provide system demonstrations after each interval. The number of bugs and defects initially encountered during early demonstrations was greatly reduced. When issues were encountered, LifeWorks explained the reasoning which helped promote stakeholder confidence in the system.</p>	8/27/2021	Closed because the quality of demonstrations has improved and any resulting follow-up items are addressed during Joint Stand-up meetings in a methodical manner.

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
System Software, Hardware, and Integrations	2020.11.JT01	Positive	N/A	N/A	The LifeWorks technology team's flexibility and collaboration demonstrates their commitment to be a trusted partner to EUTF to build a robust solution that fits EUTF requirements.	The LifeWorks technology team: <ul style="list-style-type: none"><li>• Works collaboratively with EUTF to understand the technical requirements, answer questions, and adjust the solution to find the best fit for EUTF</li><li>• Demonstrates a willingness to be transparent and openly share LifeWorks's IT practices, policies, standards, and personnel roles and responsibilities to develop, maintain, secure, operate, and support the system</li><li>• Provides documentation and ongoing clarification of the Ariel BAS solution's infrastructure, security, and disaster recovery architecture</li><li>• Through the involvement of key IT resources, shows commitment to the overall success of the project and being a trusted partner with the State of Hawaii</li></ul> This approach has helped EUTF gain comfort with the LifeWorks-managed Azure environment and how the solution aligns with EUTF's security, availability, system operations, and confidentiality requirements.	N/A	N/A for positive findings.	N/A for positive findings.	Closed	N/A	12/22/2020	Closed as this is a positive finding.
Project Organization and Management	2020.08.PM01	Risk	Low	Low	The COVID-19 pandemic may impact project schedule, resources, and costs.	The COVID-19 pandemic creates uncertainty with rapidly evolving government responses and restrictions and changing circumstances. The following a summary of the related events and facts: <ul style="list-style-type: none"><li>• A second stay-at-home/work-at-home order went into effect August 27, 2020 for Honolulu City and County and will last for at least 14 days. EUTF employees are deemed essential. All key EUTF project employees will have the ability and equipment to work from home in the event of an office closure by the end of September. All project contractors already work remotely effectively.</li><li>• The State is reviewing budgets and positions to make significant changes due to anticipated revenue shortfalls. The State also implemented a hiring freeze and is contemplating furloughs or salary cuts for State workers.</li><li>• EUTF has several open positions that could play essential roles on the project. EUTF's request to fill these positions is pending.</li><li>• The project timeline and Go-live dates do not have much room to be extended due to the annual benefit plan enrollment season. Any delays that postpone Go-live beyond the enrollment season could impact project costs.</li></ul>	2020.08.PM01.R1	Formulate processes for how to respond to COVID-19 impacts to the project.	<ul style="list-style-type: none"><li>• EUTF, project contractors, and subcontractors should timely complete a back-up resources matrix including a list of key project resources, their key primary functions, and potential backup resources in case of their inability to work.</li><li>• Assess COVID-19 direct and indirect impacts to the project and prepare contingency plans for possible scenarios.</li><li>• Ensure all key EUTF project team members have the necessary access, equipment, and technology to work remotely effectively.</li></ul>	Closed	9/25/20: The COVID-19 finding has been partially mitigated by ensuring all key EUTF project team members have computers and access to work remotely and additional headcount approved to support the project and operations. Project tools and practices such as a joint project SharePoint site and regular, recurring meetings also help the teams work effectively together from remote locations. The project contractors agreed to develop back-up resource matrices.  10/27/20: EUTF, LifeWorks, Segal, and ICON worked together to identify back-up resources for each key project team member to ensure resource continuity.	10/27/2020	Closed as all recommendations were adequately addressed. A COVID-19 risk has been added to the project's risk log so direct and indirect COVID-19 related impacts will be continuously assessed.



ASSESSMENT CATEGORY	FINDING ID	TYPE	ORIGINAL SEVERITY	CURRENT SEVERITY	FINDING	ANALYSIS	RECOMMENDATION ID	RECOMMENDATION	SUPPLEMENTAL RECOMMENDATION	FINDING STATUS	FINDING STATUS UPDATE	CLOSED DATE	CLOSURE REASON
Project Organization and Management	2020.07.PM02	Risk	Moderate	Moderate	Segal's contract contains responsibilities and deliverables beyond oversight of LifeWorks, including OCM, BPR, and quality management. Segal's project deliverables, schedule, and processes have yet to be formally documented and scheduled, which could impact the execution of Segal, ICON, and EUTF responsibilities and activities.	Segal was contracted to provide various project management, OCM, BPR, data conversion, and quality management services for EUTF. Segal is effectively monitoring and reviewing LifeWorks activities and deliverables but does not yet have a schedule for ICON's and their own independent deliverables for this project. Segal established a dashboard and regularly submits reports to EUTF; however, thus far, these reports focus mainly on LifeWorks and do not include sufficient updates regarding Segal and ICON's own activities, progress, and risks. Additionally, Segal's processes in the areas of schedule, resource, cost, and quality management are still being developed and documented.  Segal's deliverables include a BPR and OCM plan. Segal prepared a presentation, developed a tracking tool, and held a workshop to explain their BPR and OCM methodology, however, we are not aware of whether a formally documented plan or schedule of BPR and OCM tasks and resources has been prepared and delivered to EUTF for review. Further discussion of purpose and expectations for this deliverable is still needed.  ICON is responsible for data cleansing and data conversion activities. The project team identified two risks and one issue and are experiencing some delays related to data conversion. Clarifying ICON deliverables, schedule, processes, and reporting may help to prevent further issues and delays.  Possible root causes or contributing factors are an aggressive project pace and competing priorities. Both the Segal Project Manager and the EUTF Project Manager are extremely hard-working and may not have adequate time to participate in on-going Discovery Sessions and perform all of the required project management tasks. EUTF and Segal will need to work together to establish appropriate project management processes and clarify the priority of deliverables and schedules.  Although this finding is reported under the Project Organization and Management IV&V Assessment Category, this finding also impacts the criticality ratings for the Cost, Schedule, and Resource Management; OCM; BPR; Data Conversion; and Quality Management and Testing categories.	2020.07.PM02.R1	Clarify Segal and ICON deliverables.	• Clarify purpose, content, and expectations of each of the contracted deliverables. • Consider whether contracted deliverables still make sense based on project needs.	Closed	08/25/20: Segal and ICON made good progress on clarifying deliverables and project activities related to their responsibilities. EUTF, Segal, and IV&V started monthly check-in meetings and discussed Segal's "just-in-time" approach to OCM and BPR. The EUTF PM confirmed approval of this approach with preliminary activities occurring before OCM and BPR plans are formalized. ICON clarified their Data Quality Check Point (DQCP) process and preliminary results from defined business rules. Accuity closed recommendation 2020.07.PM02.R1 as IV&V received sufficient clarification of Segal and ICON deliverables.  Segal provided a deliverables schedule and ICON provided a work plan tracking the status of tasks. Segal provided a high level deliverable project schedule with duration, status, start and finish dates, and resources. The specific resources and tasks were not identified for key activities such as OCM and BPR; however, Segal noted that they would develop more detailed plans based on resource availability and bandwidth starting in December 2020. Other EUTF tasks are currently tracked in the RTM, Segal's Dashboard, and independently by EUTF project team members. Accuity closed recommendation 2020.07.PM02.R2 as IV&V received sufficient clarification of Segal and ICON's schedules for this stage of the project.  More clarity was provided for key processes on OCM, quality, data validation, and migration. Segal delivered a draft Quality Management Plan on 8/25/20 and scheduled a test planning meeting in September. ICON held a meeting to review their DQCP process and provided a high level DQCP Validation Consolidation process summary. Accuity will continue to evaluate the formalization of processes including BPR and quality management.  09/25/20: Quality processes and metrics are well-defined and communicated through the draft Quality Management Plan. BPR activities continued through meetings, Fit Gap sessions, and solution demonstrations. Data migration and cleansing processes were more clearly defined through the draft Data Migration Plan, weekly data conversion meetings and DQCP / Validation meetings.	9/25/2020	Closed as the Segal and ICON deliverables, activities and schedules have been clarified and approved by EUTF. In addition, key processes were defined and communicated through meetings, plans and metrics. Segal and ICON's status and activities are included in reports to the Joint Steering Committee.
							2020.07.PM02.R2	Develop a project schedule to manage Segal, ICON, and EUTF tasks.	• Provide the appropriate detail of tasks, durations, due dates, milestones, and deliverables for various parties.				
							2020.07.PM02.R3	Develop and clarify Segal, ICON, and EUTF processes.	• Key processes include resource and schedule management, cost management, BPR, OCM, quality management, data cleansing, and data conversion. • Consider including Segal, ICON, and EUTF's status and metrics in existing reports and dashboards. • Consider including Segal, ICON, and EUTF status and activities in recurring project management meetings to promote even greater project cohesion.				
Project Organization and Management	2020.07.PM01	Positive	N/A	N/A	The project team continues to work collaboratively and support a culture of open communication and continuous improvement amongst all parties.	The project team members have: • Encouraged EUTF SMEs to openly discuss areas of confusion and request for improvements to working sessions. • Listened to feedback from project team members and timely implemented improvements to project processes (e.g., including incorporating solution demonstrations and introducing project team members). • Openly discussed possible solutions to address areas of concern. • Continue to proactively ask for feedback after meetings and working sessions. • Openly discussed project risks and issues with all project team members. This approach has helped team members to build a high level of comfort with each other and has contributed to a smoother execution of the planning phase of the project.	N/A	N/A for positive findings.	N/A for positive findings.	Closed	N/A	8/25/2020	Closed as this is a positive finding.



## *Appendix F: Comment Log on Draft Report*



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Hawaii EUTF BAS Project: IV&V Document Comment Log				
		 <b>ACCUITY</b>		
ID #	Page #	Comment	Commenter's Organization	Accuity Resolution
1		No Hawaii EUTF or ETS Comments.		
2				
3				
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