JOSH GREEN, M.D.
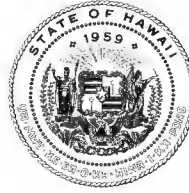GOVERNOR

DOUGLAS MURDOCK
CHIEF INFORMATION OFFICER

OFFICE OF ENTERPRISE TECHNOLOGY SERVICES

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ETS.HAWAII.GOV

April 30, 2024

The Honorable Ronald D. Kouchi
President of the Senate
  and Members of the Senate
Thirty-Second State Legislature
State Capitol, Room 409
Honolulu, Hawai'i 96813

The Honorable Scott K. Saiki
Speaker and Members of the
  House of Representatives
Thirty-Second State Legislature
State Capitol, Room 431
Honolulu, Hawai'i 96813

Aloha Senate 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 10 days of receiving the report, please find attached the report the Office of Enterprise Technology Services received for the State of Hawai'i, Department of Attorney General (AG), Child Enforcement Agency (CSEA).
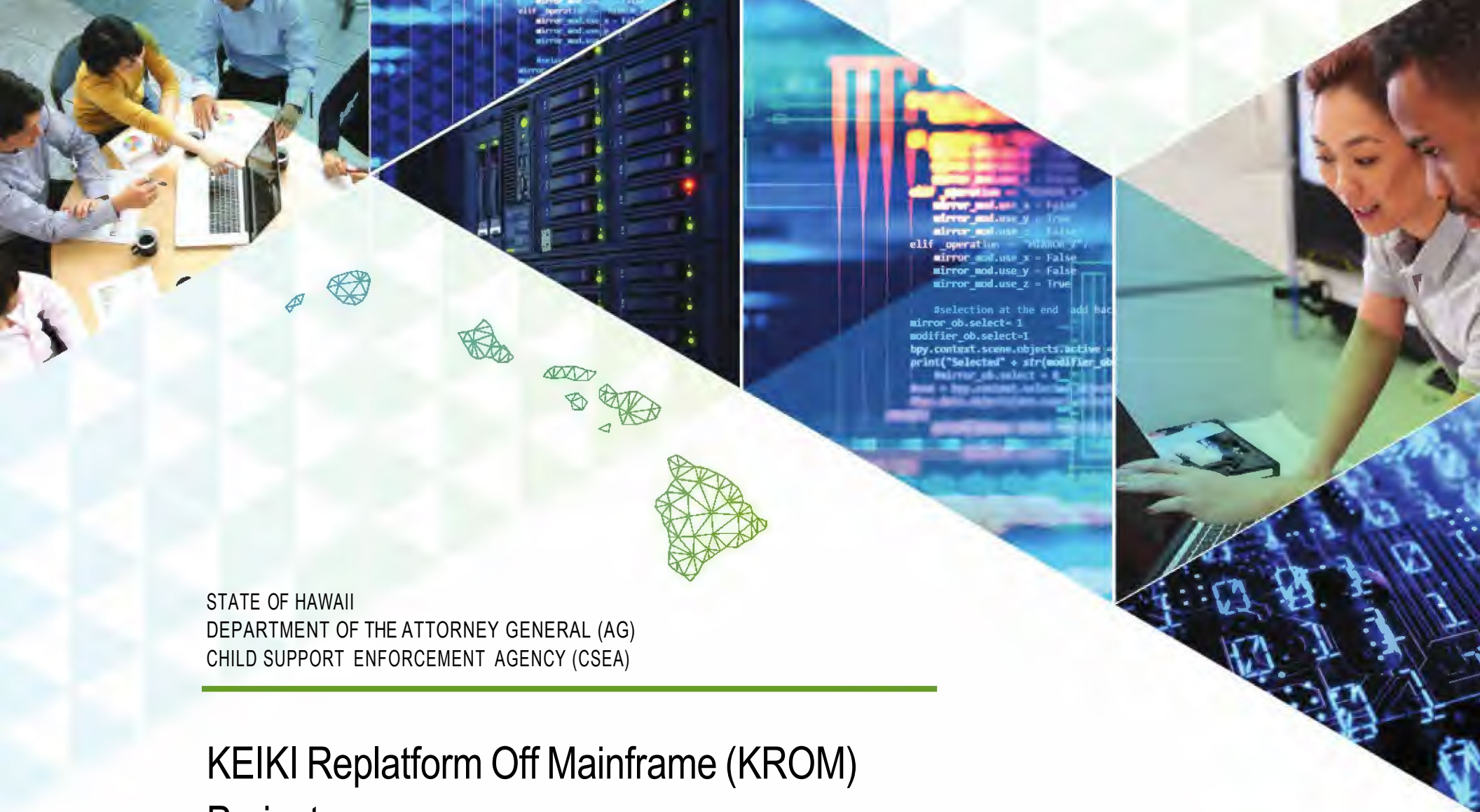
In accordance with HRS section 93-16, this report may be viewed electronically at http://ets.hawaii.gov (see "Reports").

Sincerely,

Douglas Murdock (May 1, 2024 10:08 EDT)

Douglas Murdock
Chief Information Officer
State of Hawai'i

Attachment

STATE OF HAWAII
DEPARTMENT OF THE ATTORNEY GENERAL (AG)
CHILD SUPPORT ENFORCEMENT AGENCY (CSEA)

KEIKI Replatform Off Mainframe (KROM) Project

MONTHLY IV&V REVIEW REPORT

March 31, 2024 | Version 1.0

ACCUITY

Table of Contents

Document History

DATE	DESCRIPTION	AUTHOR	VERSION
04/10/24	Monthly IV&V Review Report Draft created.	Julia Okinaka	0.0
04/29/24	Monthly IV&V Review Report finalized. Comments and responses were included in Appendix D which did not result in changes to the report.	Julia Okinaka	1.0

BACKGROUND

The State of Hawaii (State), Department of Attorney General (AG), Child Support Enforcement Agency (CSEA) contracted Protech Solutions, Inc. (Protech) on October 2, 2023 to replatform the KEIKI System and provide ongoing operations support. Protech has subcontracted One Advanced and DataHouse to perform specific project tasks related to code migration, replatforming services, and testing. Department of AG contracted Accuity LLP (Accuity) to provide Independent Verification and Validation (IV&V) services for the project.

Our initial assessment of project health was provided in the first Monthly IV&V Review Report as of October 31, 2023. Monthly IV&V review reports will be issued through September 2024 and build upon the initial report to continually update and evaluate project progress and performance.

Our IV&V Assessment Areas include People, Process, and Technology. Each month we will select specific IV&V Assessment Areas to perform more focused IV&V activities on a rotational basis. The focus of our IV&V activities for this report included the completion of a two-month assessment of Process and the beginning of a two-month assessment of People.

The IV&V Dashboard and IV&V Summary provide a quick visual and narrative snapshot of both the project status and project assessment as of March 31, 2024. Ratings are provided monthly for each IV&V Assessment Area (refer to Appendix A: IV&V Criticality and Severity Ratings). The overall rating is assigned based on the criticality ratings of the IV&V Assessment Categories and the severity ratings of the underlying observations.

PROJECT ASSESSMENT

SUMMARY RATINGS

OVERALL RATING

Y

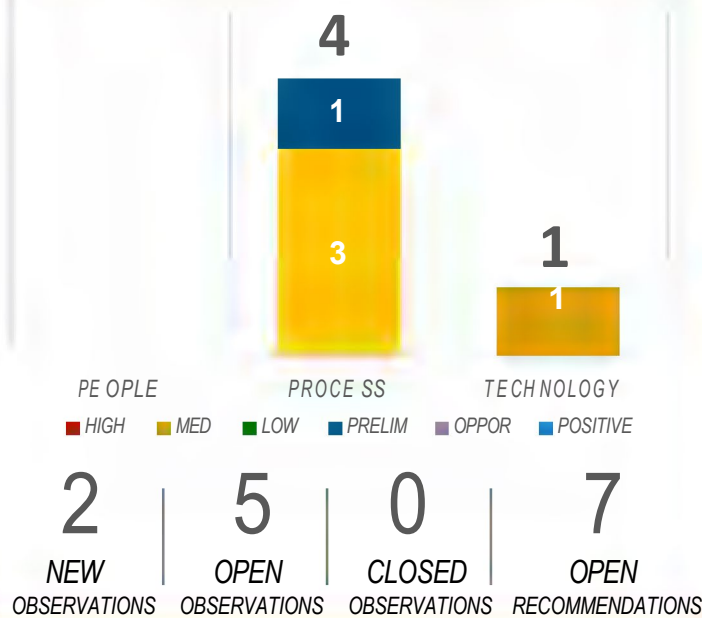Deficiencies were observed that merit attention and remediation in a timely manner.

PEOPLE G ↓

PROCESS Y

TECHNOLOGY G ↓

CRITICALITY RATINGS

R — HIGH
Y — MEDIUM
G — LOW
NA — N/A

IV&V OBSERVATIONS

4
1
3

1
1

PEOPLE | PROCESS | TECHNOLOGY

■ HIGH ■ MED ■ LOW ■ PRELIM ■ OPPOR ■ POSITIVE

2 NEW OBSERVATIONS

5 OPEN OBSERVATIONS

0 CLOSED OBSERVATIONS

7 OPEN RECOMMENDATIONS

PROJECT BUDGET *

MILLIONS

$6.4M

$- $2 $4 $6

■ INVOICED ■ TOTAL

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

PROJECT PROGRESS

17% **

■ ACTUAL PROGRESS
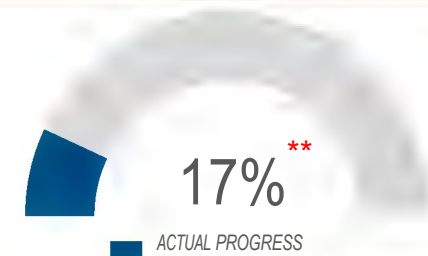
KEY PROGRESS & RISKS

- Given the ongoing project delays, CSEA should actively review and assess the project schedule independently.
- The timing of multiple agencies moving off the mainframe at different times will result in the need to modify KEIKI system interfaces after the system has been deployed.
- The runtimes for the data extraction programs to transform system code is taking longer than desired.
- Protech will present their testing approach to ensure the new system and user interface maintain the same functionality as the old system.

ASSESSMENT & PLANNING

PROGRAM DEVELOPMENT & TESTING

SYS INSTALL

IMPLEMENTATION

■ ORIGINAL ■ ACTUAL REVISED ■ DELAYED

★ SEPT 22, 2025 GO-LIVE

ASSESSMENT & PLAN

PROGRAM DEV

SYS IN

OCT 2023   MAY 2024   DEC 2024   JUL 2025

** IV&V unable to validate the progress percentage of the schedule as it does not include all project activities.

4

JAN	FEB	MAR	IV&V ASSESSMENT AREA	IV&V SUMMARY
Y	Y	Y	*Overall*	Project managers should prioritize working closely together to assess upcoming activities, the impact of project delays, and determine if any changes are needed to the overall project timeline (2023.10.002 and 2024.03.002). CSEA should be conducting independent reviews of the schedule and play a more active role in communicating how the project is doing and how to get the project status back to green. Project Schedule: The project continues to show some delays, and improvements to schedule and resource management are needed to recover time in the schedule (2024.03.002). The overall project end date and Go-Live date is projecting a 17-day variance due to the delay in the assessment validation which was completed in February. Project Costs: Contract invoices received to-date are within total contract costs. The CSEA Project Manager should establish a process to review payment schedules for changes in deliverable timelines (2023.10.002 and 2024.03.002). Quality: The project is consistently reporting on various schedule metrics. The project should start reporting on the other agreed-upon quality metrics related to testing, issue, risk, and requirements (2024.01.001). Project Success: CSEA continued to refine success metrics to prepare for reporting which will begin next month (2023.10.002 and 2024.01.001).
G↓	G↓	G↓	*People* *Team, Stakeholders, & Culture*	• The Monthly Steering Committee (ESC) continues to meet monthly. CSEA should assume a more proactive role in communicating project progress to stakeholders. This will facilitate a balanced assessment of the project status and enable timely corrective measures to get the project back on track (2023.10.002 and 2024.03.002). • Protech added additional resources to assist with system test script development to ensure script development and reviews do not fall further behind. • CSEA developers worked diligently to optimize large data extract programs resulting in a 63% improvement in runtime. • As key project activities get drawn out or extended, CSEA should take a larger role of assessing the impact of project delays and adjusting the adequacy of project resources on current and future tasks (2024.03.002). • CSEA communicates with external agencies regularly and plans on working with Protech to identify external project stakeholders and communication activities starting in June 2024.

JAN	FEB	MAR	IV&V ASSESSMENT AREA	IV&V SUMMARY
Y	Y	Y	*Process* *Approach & Execution*	• The overall project end date and Go-Live date is projecting a 17-day variance due to the delay in the assessment validation which was completed in February. Since February, key activities have moved forward including data extraction programming, solution requirements documentation, data conversion planning, and initial delivery of the converted code (2023.10.002 and 2024.03.002). • CSEA should be conducting independent reviews of the schedule, ensure key state milestones are included in the overall project timeline, and proactively oversee the project schedule to prevent further delays (2023.10.002 and 2024.03.002). • Although improvements were made to project status reports, they could be further improved by outlining delayed tasks and upcoming activities to ensure stakeholders are adequately prepared (2024.01.001 and 2024.03.002). • The project is making progress on deliverables and the Technical Architecture Plan, System Test Plan, and System Requirements Definition documents were approved. The Code and Data Conversion Plan draft is under review. • Protech is planning on a presentation in April or May to explain how their testing approach will ensure that the new system and user interface will maintain the same functionality as the old system (2024.02.001). Without documented requirements, it is still unclear how program development progress, testing, and acceptance will be managed and monitored. • The project is consistently reporting on various schedule metrics. The project should start reporting on the other agreed-upon project success and quality metrics (2024.01.001).
R	G↓	G↓	*Technology* *System, Data, & Security*	• The KEIKI application assessment validation was completed, and the System Requirements Definition document was approved finalizing the production KEIKI Scope. • The timing of other State of Hawaii modernization projects impacts the ability to properly design KEIKI system interfaces and will necessitate the need for interface modifications after its deployment, which can lead to additional costs, delays, and disruption to the system (2024.03.001). • The project completed the final data extract files from the mainframe. The runtimes for the data extraction programs to transform the KEIKI system code is taking longer than desired. The project is working to optimize these programs and reduce runtimes for large files. • Code conversion of the current application code is delayed. Protech and Advanced delivered the scripts to build the SQL server database and the initial version of the converted KEIKI code. • The KEIKI AWS test environment was built to load the SQL database and initial extracts. CSEA provided Protech with the IRS security evaluation checklists to ensure the AWS environment is prepared to receive, process and store confidential information. A plan to validate and confirm the security of the environments is still needed. • CSEA increased the bandwidth to improve the file transfer times.

IV&V ASSESSMENT AREAS

People

Process

Technology

| OBSERVATION #: **2024.03.001** | STATUS: **OPEN** | TYPE: **RISK** | SEVERITY: **2** |

TITLE: TIMING OF AND MULITPLE INTERFACE CHANGES

Observation: The timing of other State of Hawaii modernization projects impacts the ability to properly design KEIKI system interfaces and will necessitate the need for interface modifications after its deployment, which can lead to additional costs, delays, and disruption to the system.

Industry Standards and Best Practices: IEEE 15288-2023 provides guidance on the development of interfaces between different systems. It discusses the importance of defining system interfaces and designing interfaces that are scalable, robust, and secure.

Analysis: CSEA's KEIKI system currently relies on a legacy cyberfusion system running on the State's mainframe for system file and data exchanges with multiple State of Hawaii agencies. The timing of multiple agencies moving off the mainframe at different times will result in the need to modify KEIKI system interfaces after the system has been deployed. Until other State modernization projects are completed, the KEIKI project cannot perform server-based data exchanges and will need to continue to interface via the mainframe.

In addition, as the KEIKI project involves integrating a modernized child support system with existing legacy systems, there may be other technological and architectural gaps that arise. These gaps can include differences in technology stacks, such as programming languages, database systems, and operating environments, as well as the absence of modern application programming interfaces (APIs) in the legacy systems. Based on the timing of concurrent State of Hawaii modernization projects and upgrades, the end-to-end testing of the KEIKI system may necessitate the undertaking of supplementary tasks, allocation of additional resources, and coordination efforts.

Recommendation: 2024.03.001.R1 – CSEA should coordinate regular meetings with impacted State of Hawaii agencies.
- Roles, responsibilities, expectations and interface requirements should be clearly defined to ensure information and project status is proactively communicated for the various modernization efforts.

2024.03.001.R2 – The projects should properly plan for interfaces so that they are flexible enough to accommodate future changes and are compatible with other agencies.
- Clearly identify all the interfaces that the system will interact with and how they will communicate.
- Develop interfaces and data structure that are flexible enough to accommodate changes to the interfaces.
- Detailed testing will be required as the various departments upgrade their systems to ensure compatibility.

IV&V ASSESSMENT AREAS

People

Process

Technology

OBSERVATION #: 2024.03.002 | **STATUS: OPEN** | **TYPE: ISSUE** | **SEVERITY:** 2

TITLE: IMPROVED SCHEDULE AND RESOURCE MANAGEMENT

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

Industry Standards and Best Practices: PMBOK discusses the importance of developing a realistic and [1] comprehensive project schedule that includes all the tasks and activities that need to be completed, identifying the necessary resources, allocating those resources appropriately, and monitoring and controlling the schedule and resources throughout the project lifecycle.

Analysis: The overall project end date and Go-Live date is projecting a 17-day variance due to the delay in the assessment validation which was completed in February. It is crucial for the Protech and CSEA project managers to both take active roles in tracking and monitoring project activities, especially delayed and upcoming tasks, to collaborate on ways to get the project back on track.

Although the project metrics are showing a 17-day variance, some project tasks are delayed 1 to 2 months from the approved baseline including building the KEIKI database, developing system test scripts, UI design, UI development, code conversion, system test execution, etc. CSEA should have a clear understanding of the impact of delays on the overall timeline and validate the 17-day schedule variance.

Recommendation: 2024.03.002.R1 – Based on the complexity of the KEIKI project, review and refine the schedule regularly with detailed tasks, realistic durations, and adequate resources.
- The project managers should meet weekly to discuss the project schedule, continue to identify detailed-level tasks based on high-level timelines, and identify schedule and resource related risks.
- The CSEA project manager should conduct independent reviews of the schedule and project metrics, proactively communicate upcoming State tasks to CSEA stakeholders, create State specific detailed schedules, and communicate any concerns with the quality of vendor execution.
- The Protech project manager should be executing tasks based on the approved schedule, identify schedule variances, ensure all project resources are on track, and report on quality and project metrics to ensure the project is meeting its objectives and goals.

IV&V ASSESSMENT AREAS

People

Process

Technology

OBSERVATION #: **2024.03.002** | STATUS: **OPEN** | TYPE: **ISSUE** | SEVERITY: 2

TITLE: **IMPROVED SCHEDULE AND RESOURCE MANAGEMENT (CONTINUED)**

2024.03.002.R2 – Continuously review and refine the project schedule.
- Provide the appropriate detail of tasks, durations, due dates, milestones, and key work products for various parties. CSEA assigned tasks should also be clearly reflected in the project schedule.
- Obtain agreement on the baseline schedule and then hold parties accountable for tasks and deadlines.

2024.03.002.R3 – Analyze and clearly report on delayed tasks and upcoming activities.
- Perform a root cause analysis including defining the problem, brainstorming possible causes, and developing a plan to address the root cause of the problem such as resource constraints and undefined tasks.
- Learning from previously delayed and drawn-out tasks, continuously analyze and refine the schedule based on the time and resources needed to perform actual work.
- Outlining delayed tasks and upcoming activities is crucial for effective project management. It helps to improve communication, accountability, risk management, and resource allocation.

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. 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, the overall impact of the related observations 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 observations. No arrow indicates there was neither improving nor declining progress from the prior report.

<table>
<tr>
<td>R</td>
<td>↑R</td>
<td>↓R</td>
<td>A **RED**, high criticality rating is assigned when significant severe deficiencies were observed, and immediate remediation or risk mitigation is required.</td>
</tr>
<tr>
<td>Y</td>
<td>↑Y</td>
<td>↓Y</td>
<td>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.</td>
</tr>
<tr>
<td>G</td>
<td>↑G</td>
<td>↓G</td>
<td>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.</td>
</tr>
<tr>
<td>NA</td>
<td></td>
<td></td>
<td>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.</td>
</tr>
</table>

TERMS

RISK
An event that has not happened yet.

_____

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

ACCUITY

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).

Observations that are positive, preliminary concerns, or opportunities are not assigned a severity rating.

SEVERITY 1: High/Critical level

SEVERITY 2: Moderate level

SEVERITY 3: Low level

TERMS

POSITIVE
Celebrates high performance or project successes.

PRELIMINARY CONCERN
Potential risk requiring further analysis.

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
PMBOK® v7	Project Management Institute (PMI) Project Management Body of Knowledge
SPM	PMI The Standard for Project Management
PROSCI ADKAR®	Leading organization providing research, methodology, and tools on change management practices
SWEBOK v3	Guide to the Software Engineering Body of Knowledge
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 16085:2021	ISO/IEC Systems and Software Engineering – Life Cycle Processes – Risk Management
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

STANDARD	DESCRIPTION
IEEE 15288-2023	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 24748-3-2020	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 14764-2021	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 29119-1-2021	ISO/IEC/IEEE International Standard – Software and Systems Engineering – Software Testing – Part 1: Concepts and Definitions
IEEE 29119-2-2021	ISO/IEC/IEEE International Standard – Software and Systems Engineering – Software Testing – Part 2: Test Processes
IEEE 29119-3-2021	ISO/IEC/IEEE International Standard – Software and Systems Engineering – Software Testing – Part 3: Test Documentation
IEEE 29119-4-2021	ISO/IEC/IEEE International Standard – Software and Systems Engineering – Software Testing – Part 4: Test Techniques
IEEE 1484.13.1-2012	IEEE Standard for Learning Technology – Conceptual Model for Resource Aggregation for Learning, Education, and Training
ISO/IEC TR 20000-11:2021	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 27002:2022	Information Technology – Security Techniques – Code of Practice for Information Security Controls

STANDARD	DESCRIPTION
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: Prior Findings Log

Appendix C: Prior Findings Log

ASSESSMENT AREA	OBSERVATION ID	TYPE	ORIGINAL SEVERITY	CURRENT SEVERITY	OBSERVATION	ANALYSIS	RECOMMENDATIONS	STATUS	STATUS UPDATE	CLOSED DATE	CLOSURE REASON
Process	2024.02.001	Preliminary	N/A	N/A	Additional information is needed regarding Protech's program development and testing approach.	In February, Protech delivered the System Requirements Document and Test Plan which are still under review. CSEA already provided a number of comments for both deliverables requesting additional clarification or additional documentation. Both deliverables do not provide sufficient understanding of Protech and One Advanced's approach for the program development and testing phase. There needs to be a clearer mutual understanding of how Protech's development and testing approach will ensure that the new system and user interface will maintain the same functionality, data, and system interfaces as the old system. The System Requirements Definition deliverable is high-level documentation of items such as source code, data component, and interface tables but does not actually capture the required functionality using industry standard format for requirements. Documenting requirements is especially important for the development of the new front-end user interface (UI). The System Requirements Definition deliverable included a User Interface section but does not include sufficient information regarding UI requirements. Protech has another UI Refinement plan deliverable due in May 2024, however, it is unclear if UI requirements will be included in that deliverable.

If system requirements will not be used to manage development of UI as well as replatforming and refactoring of code work, then it is important to understand how Protech and One Advanced are planning to manage and report on development progress. Additionally, without documented system requirements, testing will be even more critical for identifying gaps in or issues with functionality during the development process. CSEA also has a number of comments and questions on the Protech Test Plan deliverable. In addition to the System Test Plan, Protech is developing an Acceptance Test Plan (UAT Plan) deliverable due in April 2024 which may help to provide additional clarification of the comprehensive testing strategy and delineation of testing responsibilities between Protech and CSEA.

CSEA plans to work with Protech to clarify and refine both deliverables. IV&V will continue to monitor this preliminary concern as additional information is discovered. | N/A for preliminary concerns | N/A | 03/31/24: Protech is planning on a presentation in April or May to explain how their testing approach will ensure that the new system and user interface will maintain the same functionality as the old system. Without documented requirements, it is still unclear how program development progress, testing, and acceptance will be managed and monitored.

IV&V will continue to monitor the clarification of the program development and testing approach. | | |
| Process | 2024.01.001 | Risk | Moderate | Moderate | Ineffective project status meetings and reports can lead to delayed decision-making, lack of accountability, and reduced morale. | Weekly status reports are provided with a dashboard of the project status, high level schedule, late tasks, tasks planned this week, open tasks, 30-day look ahead, deliverable status, risks log, key decisions, change requests, and other project information. Despite numerous data points, the weekly project status reports may not give a complete picture of the project's progress. To get a better understanding of any delays, risks, issues, or action items, additional research and analysis of past reports, review of the Microsoft Project schedule, and inquiry with project members is necessary. For example, late project deliverables may be listed as simply "in progress"; however, one is unable to determine how many additional days the deliverable was pushed back without checking the previous weekly status report and the reason for additional time is not discussed or disclosed. | CLOSED: 2024.01.001.R1 – CSEA should play an active role in refining the project status report and providing topics for weekly project meetings.
• Contribute to the improvement of project meetings and reports that actively engage team members and highlight key information relevant to the audience to promote problem-solving and constructive dialogue.
• CSEA could solicit feedback prior to meetings so the team can be prepared to ask questions or discuss relevant project topics.

CLOSED: 2024.01.001.R2 – Set clear objectives for meetings and provide concise and relevant information that adds value.
• Meetings and reports without clear objectives can quickly turn into a one-way status update without any meaningful discussion or clear understanding of project status, risks, and issues.
• Provide reports that are concise, relevant and clear to the audience. Only include charts and tables that provide value and present data in a format that helps provide meaningful information to move the team forward.

2024.01.001.R3 - Additional quality metrics and project success metrics should be added to project status reports. | Open | 02/29/24: A new recommendation was added and two recommendations were closed. Two recommendations were closed as CSEA and Protech worked together to improve project status reports to be more clear, meaningful, and relevant to the audience. The streamlined status reports are facilitating greater understanding and allowing more time for meaningful discussion amongst project stakeholders.

03/31/24: Although improvements were made to project status reports, they could be further improved by outlining delayed tasks and upcoming activities to ensure stakeholders are adequately prepared. CSEA continued to refine success metrics to prepare for reporting which will begin next month.

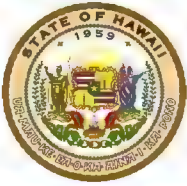IV&V will continue to assess the effectiveness of project status reports and meetings. | | |

ASSESSMENT AREA	OBSERVATION ID	TYPE	ORIGINAL SEVERITY	CURRENT SEVERITY	OBSERVATION	ANALYSIS	RECOMMENDATIONS	STATUS	STATUS UPDATE	CLOSED DATE	CLOSURE REASON
Process	2023.10.002	Risk	Prelim	Moderate	Untimely project management responsibilities may impact effective project execution.	The Protech Project Manager provided a draft project schedule; however, it was incomplete and listed due dates that were already missed for several deliverables. The implementation of strong schedule and resource management practices early will help the project start off right and stay on track. Protech's Project Manager is experienced with similar implementations and is working collaboratively with the project team to address feedback. Possible root causes or contributing factors are turnover of project managers, an aggressive project timeline, and need for additional project management support. Another possible root cause is Protech's need to revisit the project RFP and submitted proposal to reduce the misalignment of expectations, creating longer deliverable review cycles. Feedback on preliminary deliverables does not appear to be adequately addressed. For example, the need for a resource loaded schedule was communicated verbally and in meetings repeatedly.	CLOSED: 2023.10.002.R1 – Improve the project schedule to address schedule comments. • Develop a detailed plan with assigned resources to complete project tasks. • Provide the appropriate detail of tasks, durations, due dates, milestones, and key work products for various parties. CSEA assigned tasks should also be clearly reflected in the project schedule. • Obtain agreement on the baseline schedule and then hold parties accountable for tasks and deadlines. CLOSED: 2023.10.002.R2 – Determine the root causes of delays and develop plans to address them. • Perform a root cause analysis including defining the problem, brainstorming possible causes, and developing a plan to address the root cause of the problem such as resource constraints and undefined tasks. • Based on the experience of the last two months, create a realistic schedule based on the time and resources needed to perform tasks. CLOSED: 2023.10.002.R3 – Assess the need for additional Protech resources for project management support. 2023.10.002.R4 – Have the CSEA and Protech Project Managers adopt a more joint, collaborative approach. • Have the PMs clearly define their roles and responsibilities in project management responsibilities. • Actively plan, share and execute project responsibilities.	Open	11/30/23: This was originally reported in the October 2023 IV&V Monthly Report as a preliminary concern but was upgraded to and rewritten as a risk this month with recommendations. The project is still challenged with insufficiently updating deliverables and continued delays in the proposed project schedule. 12/31/23: Acuity increased the severity rating from Level 3 (Low) to Level 2 (Moderate). More rigor on foundational project management practices is needed to prevent further delays and increase the quality of project execution. The approved project schedule still lacks detailed tasks to adequately plan project resources and monitor project performance. Although the project schedule has some percentage completion, the process to monitor and calculate metrics is unclear. 01/31/24: Despite several meetings, there is still a need for a greater shared understanding of schedule concerns between Protech and CSEA. This risk will continue to be evaluated with the recent addition of Protech resources to improve the timeliness of project execution, a recommendation was added that project managers can adopt a more joint, collaborative approach to share and clearly delineate project management responsibilities. 02/29/24: The project schedule does not include all project tasks and is being updated to include more granular-level project activities One recommendation was closed as Protech added additional project management resources. 03/31/24: Closed two recommendations as a new, separate observation with recommendations related to schedule and resource management was opened. Refer to observation 2023.03.002. Project managers should prioritize working closely together to assess upcoming activities, the impact of project delays, and determine if any changes are needed to the overall project timeline IV&V will continue to assess project management responsibilities.		
Technology	2023.12.001	Positive	Moderate	N/A	The Automated Application Assessment process was well planned and executed.	Protech's partner, Advanced, worked closely with CSEA's technical SMEs and outlined a clear, well-defined process to collect and assess the KEIKI mainframe application in preparation for the migration and code conversion. Advanced's weekly status updates and follow-ups helped all stakeholders understand their roles, responsibilities, outstanding tasks, and status of activities. Their final assessment report was comprehensive, data-driven and insightful, and prepared the project team well as they begin the next phase of legacy code and data system migration.	N/A	Closed	N/A	01/31/24	Closed as this is a positive observation.

ASSESSMENT AREA	OBSERVATION ID	TYPE	ORIGINAL SEVERITY	CURRENT SEVERITY	OBSERVATION	ANALYSIS	RECOMMENDATIONS	STATUS	STATUS UPDATE	CLOSED DATE	CLOSURE REASON
Technology	2023.11.001	Risk	Moderate	Moderate	Complex data system migration requirements, combined with incomplete documentation and the absence of a formalized process for non-code tasks, may lead to project delays, unmet contract requirements, and quality issues.	Data system migration and mapping can be complex and cause project delays if not properly planned and managed. The KEIKI system's incomplete documentation and multitude of jobs, workflows, interfaces, and interface files pose a risk of overlooking certain elements, making it challenging to track and validate migration requirements. The project lacks a formalized process for non-code tasks in the data system requirements collection, migration, and validation activities. The project has a formalized process for application code migration but lacks a clear process for gathering non-code and ancillary elements including hardware, software, interfaces, and batch files. The absence of a separate, formalized process and reliance on manual processes using Excel worksheets may result in data loss, poor quality, and technical issues affecting system performance and user experience. The SI's waterfall approach requires upfront gathering and definition of all requirements in a linear sequence. Late identification of data system migration requirements may result in insufficient time or budget to execute the migration properly.	2023.11.001.R1 – Develop separate formalized data system migration plans and processes for non-code elements. • A separate implementation plan should be clearly outlined, determining the timeline, tasks, tools, and resources needed to perform these activities. • Develop a formalized data migration acceptance process for the remaining cycles with defined acceptance criteria. • Determine what validation is needed by other agencies and stakeholders that rely on CSEA's Keiki system and outputs. 2023.11.001.R2 – Investigate automated tools for tracking and validating data system requirements. • Automated data validation should be investigated to help identify missing elements, increase data accuracy, and alleviate resource constraints. 2023.11.001.R3 – Ensure data system requirements are comprehensive and complete upfront. • Given the waterfall approach, schedule and resource considerations should be given to increasing system requirement gathering upfront. • The project managers should ensure greater coordination of project information needed for requirements management and tracking. • Consider an iterative approach for non-code migration activities, which allows for several rounds of review and validation. 2023.11.001.R4 – Appoint dedicated Data System Migration Leads from both Protech and CSEA. • Consider identifying dedicated leads to assist with analyzing the existing data environment, identifying data migration requirements, supporting the migration process, troubleshooting issues that arise, and coordinating tasks with Protech, Advanced, Datahouse, and CSEA.	Closed	12/31/23: CSEA appointed two dedicated Data System Migration Leads. It is unclear if Protech also appointed a dedicated lead. A clear plan is still missing, and CSEA documented a formal issue related to the lack of information coordination and redundant requests related to the data system migration requirements. 01/31/24: Risk closed as the inventory of non-code and ancillary elements including hardware, software, interfaces, and batch files was completed and will be validated as part of the technical architecture and system requirements documentation.	01/31/24	Risk closed as the inventory of non-code and ancillary elements was completed.
People	2023.10.001	Positive	N/A	N/A	The project team members are engaged and the environment between Protech and CSEA is collaborative.	The CSEA SMEs appear to be engaged in ongoing Assessment sessions and accountable for timely completing required tasks, providing information, and responding to questions. The project team members regularly seek feedback, input, and clarification in an open and respectful manner. The experience and knowledge of Protech team members combined with the dedication and high level of engagement from CSEA SMEs support the positive project team environment.	N/A	Closed	N/A	11/30/23	Closed as this is a positive observation.

Appendix D: Comment Log on Draft Report

Comment Log on Draft Report

KROM Project: IV&V Document Comment Log				

ID #	Page #	Comment	Commenter's Organization	Accuity Resolution
1	5	Re: Overall Assessment – CSEA project team values the recommendation about the agency taking a more active role in communication and managing the project progress.	CSEA	Statement from CSEA regarding CSEA's role in communication is noted. No changes made to the March IV&V report.
2		ProTech PM and CSEA PM have maintained frequent communication on daily basis since the project inception. Therefore, CSEA is fully aware of the project status. The 17-day delay is out of necessity due to additional tasks identified, not a scope creep. It is not probable to result in a major project slow-down according to the current assessment. In the meantime, CSEA's RFP, an integral part of the Contract, include clear project success expectations. The quality of short-term and the final project outcomes takes priority over minor spontaneous fluctuations in project timeline. In case CSEA identifies any future delays that are not warranted and possibly jeopardize the success of any key project deliverables, the agency will take necessary measures to demand remedies from ProTech. As for the contractor billing, CSEA has currently been invoiced according to the project payment schedule which hasn't significantly deviated from corresponding deliverables.	CSEA	Statements from CSEA regarding regular communications with Contractor and reasons for the 17-day delay are noted. IV&V identified tasks in the project schedule that may impact the critical path and overall project timeline. At the time of the IV&V report, CSEA had not yet performed their own analysis to confirm the estimated overall project delay. Accuity will monitor future meetings dedicated to reviewing the project schedule. Statements from CSEA regarding contractor billing are noted. Accuity stated that a process to review payment schedules should be established as deliverable timelines have been delayed and there is a growing gap between % project completion vs. % invoiced. With regards to additional clarification requested regarding quality metrics, Accuity recommends reporting on the metrics approved in the Project Management Plan dated January 8, 2024. IV&V reported in January 2024 that the metrics were established, and the remaining recommendation is for the

ID #	Page #	Comment	Commenter's Organization	Accuity Resolution
		With regard to Quality and Project Success, CSEA has established a set of project success factors and would appreciate greater clarity as to what quality metrics relative to testing, issue, risk, and requirements that have yet to be addressed.		project to begin reporting on all applicable quality and success metrics. IV&V's role is to monitor adherence to approved plans and has inquired about reporting of approved metrics in previous meetings as well. The CSEA statements and clarification are noted, and progress will continue to be monitored and reported on in future reports. No changes were made to the March IV&V report.
2	8	CSEA acknowledges a 17-day variance in both the overall project end date and the go-live date. However, it's important to highlight that there are no external constraints mandating a specific completion date for this project. Our priority is to ensure the quality and functionality of the product, rather than adhering strictly to deadlines. Additionally, the contract is fixed-price, meaning that any necessary delays to ensure product quality will not incur additional costs.	CSEA	Statement from CSEA regarding their perspective and comfort with the current 17-day schedule variance. IV&V agrees with CSEA that quality and functionality are important project success factors. Our report does not contradict this but rather is to communicate the potential risk that schedule delays have on quality and scope, especially given the fixed-price contract terms. While CSEA prioritizes quality and functionality over schedule concerns, schedule delays require vendors to extend or add resource time which likely results in additional costs to the vendor. The longer the overall project timeline is extended, the greater the potential for the vendor to endure financial losses. Appropriate actions to mitigate this risk support CSEA's priorities helping to ensure that quality and scope are not compromised. IV&V's concern and recommendation includes that CSEA should actively review and assess the project schedule independently to ensure that the delay is not longer than stated and that all critical path items are accounted for. This will help ensure that the project stays on track and that any issues are identified and addressed promptly. No changes made to the March IV&V report.

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