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August 7, 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,

Christine M. Sakuda
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

June 30, 2024 | Version 1.0

ACCUITY

An independent member of bakertilly INTERNATIONAL

Table of Contents

Document History

DATE	DESCRIPTION	AUTHOR	VERSION
07/19/24	Monthly IV&V Review Report Draft created.	Diana Dumitrascu	0.0
07/30/24	Report draft was updated for minor edits and to make correction on page 8 which is also reflected in the Comment Log.	Diana Dumitrascu	1.0

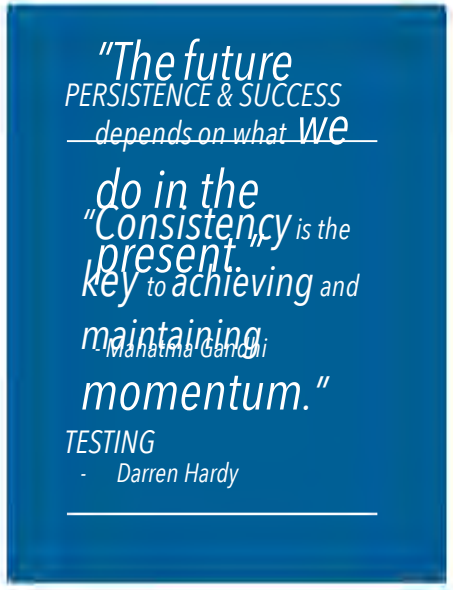
BACKGROUND

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 June 30, 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

JUNE 2024

SUMMARY RATINGS

OVERALL RATING

G

Minimal deficiencies were observed. Oversight may be needed to ensure risks stay low and project remains on track.

PEOPLE G

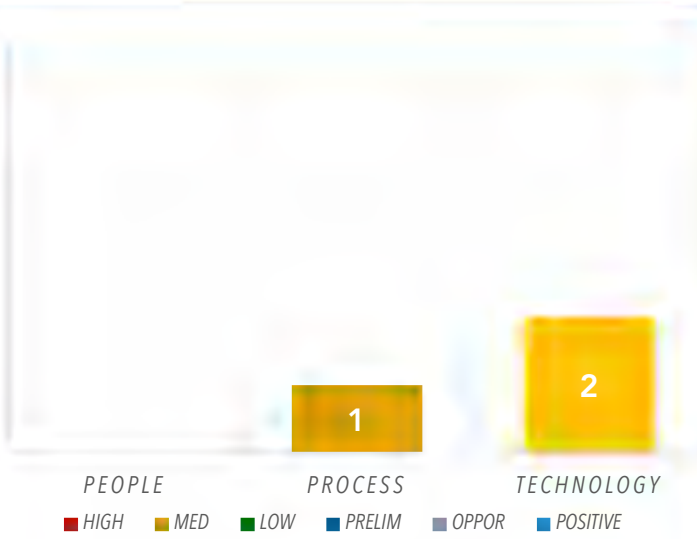
PROCESS Y

TECHNOLOGY Y

CRITICALITY RATINGS

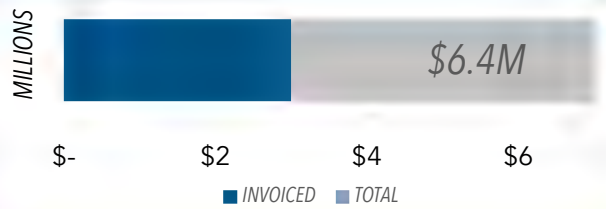
R HIGH | Y MEDIUM | G LOW | NA N/A

IV&V OBSERVATIONS



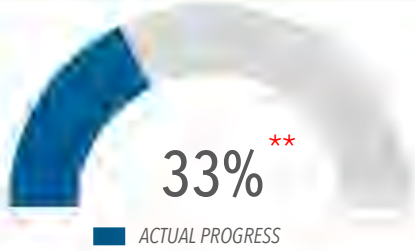
2	3	3	4
NEW OBSERVATIONS	OPEN OBSERVATIONS	CLOSED OBSERVATIONS	OPEN RECOMMENDATIONS

PROJECT BUDGET *



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

PROJECT PROGRESS



KEY PROGRESS & RISKS

- The project team's collaboration and shared commitment to resolve issues timely are helping the project move forward and prevent further overall project delays.
- Protech delivered a draft of the replanned project schedule and analysis for CSEA's feedback and approval.
- Pre-delivery testing on the initial KEIKI application build was completed in June 2024. System testing began and it is scheduled to run until March 2025. Protech gave the testing overview presentation on June 17, which explained the different testing types and how testing will ensure the new system and UI retain functionality.

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

APR	MAY	JUN	IV&V ASSESSMENT AREA	IV&V SUMMARY
R	R	R	*Overall*	The project team's collaboration and shared commitment to resolve issues timely are helping the project move forward and preventing any further delays in the overall project schedule. The initial build of the KEIKI application and pre-delivery testing were completed in June 2024. System Testing began in June. Project Schedule: The project schedule has been revised and implemented, successfully recovering the 17-day variance. The Go-Live date has been shifted to the Labor Day long weekend in September 2025 to minimize the impact on CSEA operations. CSEA has reviewed and approved the revised project schedule. 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: Weekly test status reports are being reviewed to ensure testing quality and effectiveness. The report provides an overview of the testing activities, highlighting the completion of regression testing on the replatformed application and progress on Batch Testing and Financial Test Deck (FTD) testing, including some Online (Screen) tests. Project Success: The CSEA Project Manager presented some of the project's key success metrics including minimum downtime during migration, data integrity and loss prevention, functional integrity, and compliance and security.
R	G	G	*People* *Team, Stakeholders, & Culture*	• The Monthly Steering Committee (ESC) convened in June, and the CSEA Project Manager played an active role in presenting project risks and key success metrics (2023.10.002 and 2024.03.002). • Project team members are working collaboratively to make progress in the system testing phase. They are actively addressing questions and issues that arise during the testing process. • CSEA and Protech continue to work together to refine the data extraction process, enhancing the effectiveness of data validation. • CSEA continues to meet monthly with external Departments and works with Protech to identify external project stakeholders and communication activities.

APR	MAY	JUN	IV&V ASSESSMENT AREA	IV&V SUMMARY
R	R	R	*Process* *Approach & Execution*	• CSEA and Protech agreed on the replanned project schedule which successfully recovered the 17-day variance and shifted the Go-Live date to the Labor Day long weekend in September 2025 to minimize the impact on CSEA operations. The 17-day variance was remediated. • The project managers have weekly recurring status meetings dedicated to discussing the schedule. • A Weekly Test Report was added to the weekly status meetings. This report details the testing scope for the week, specifying the major types of testing conducted: Regression, FTD, Online, and Batch jobs. Additionally, it includes information on defects re-tested and completed, with a table listing defects, summaries, assignees, dates, components, severity, and priority. The report also summarizes test case metrics, comparing planned versus executed and passed versus failed test cases for the week. IV&V will continue to report as system testing progresses. • Risks continue to be logged and actively discussed during bi-weekly risk meetings, utilizing a RAID log to track risks, actions, issues, and decisions, with updates written for each item as a good way of keeping track. • Protech's testing approach presentation was delivered on 6/17/2024. The presentation explained how the various parts of testing are going to be executed during the life of the project. The presentation went into the four types of System Testing: Pre-delivery testing, financial test deck testing, batch testing, and online testing. The financial test deck and the batch testing can be conducted concurrently, while online testing is dependent on the delivery of HATS UI Replacement. • CSEA is working with Protech to optimize data extraction times (2024.06.001), aiming to minimize any potential downtime during the system cut-over.
R	R	Y	*Technology* *System, Data, & Security*	• Pre-delivery testing was completed. Regression testing for the KEIKI online application and eavJES batch application were also completed. System Testing (including Financial Test Deck Testing, Batch Testing, Online (Screen Testing), and Interface Testing) is in progress. • The data extraction process is facing delays due to shared mainframe resources, inefficiencies, and lengthy download/upload times. CSEA is currently evaluating a SQL replication strategy, involving two dedicated resources and daily meetings to address these issues, with the goal of completing validation by July 31st (2024.06.001). • The AWS infrastructure setup was completed to support the online testing environment. • The batch job regression testing on the replatformed KEIKI application was completed. • The UI development made good progress with 435 of 467 UI modules identified and updated by Protech. CSEA is waiting for Protech to deliver a more thorough functional overview or demo of the UI. The UI Refinement Plan is currently in progress but is running behind schedule.

IV&V ASSESSMENT AREAS

People

Process

Technology

OBSERVATION #: 2024.06.001	STATUS: OPEN	TYPE: RISK	SEVERITY: 2

TITLE: **DATA EXTRACTION AND MIGRATION**

Observation: There is a risk for delays in the data extraction process, which is critical for the cutover activities, due to reliance on shared mainframe resources, inefficiencies in data extraction programs, and long download/upload times. This could impact the project by increasing costs, compromising the quality of the overall solution, and causing operational downtime of 4 to 5 days during the cutover weekend, thereby extending the project timeline. 1

Industry Standards and Best Practices: IEEE 1849-2016, titled "IEEE Standard for eXtensible Event Stream (XES) for Achieving Interoperability in Event Logs and Event Streams." This standard defines a framework for extracting, sharing, and analyzing event data from various systems to ensure interoperability and consistency in data handling.

Analysis: The data extraction process is critical for the cutover activities and current projections show potential for significant delays. This issue results from reliance on shared mainframe resources, inefficiencies in data extraction programs, and long download/upload times. Each time new data is needed for testing, the entire database must be extracted, which is time-consuming. CSEA is evaluating a SQL replication strategy to replace the current process and has assigned two dedicated resources to identify and test this approach. Daily meetings with DDI and CSEA have been established to collaborate on this issue. The target for validating this approach is July 31st.

The static data collected from the data extract process projects a worst-case scenario of 12 to 36 days to fully extract ADABAS data to the 374 flat files, including downloading and uploading the files. This arises due to: 1) CSEA uses a shared mainframe, 2) inefficiencies of data extraction programs, 3) download/upload times. The data extract process is central to the cutover activities completing over Fri/Sat/Sun. If not improved, CSEA may face 4/5 days operational downtime for cutover weekend.

Recommendation: N/A. Awaiting July 31st CSEA decision.

IV&V ASSESSMENT AREAS

People

Process

Technology

OBSERVATION #: 2024.06.002	STATUS: OPEN	TYPE: RISK	SEVERITY: 2

TITLE: **DATA EXTRACTION COST**

Observation: The project faces a significant risk of incurring extensive costs for delivering the necessary data to test the refactored KEIKI application, potentially leading to delays in the project timeline and increased budget constraints. Despite discussions with Protech and AWS, the issue remains billing-related rather than technical, necessitating ongoing negotiations with ETS to determine financial responsibility. CSEA has developed a second option to use a SQL to SQL transfer in to reduce the amount of federal funding needed for this piece of the contract. In the month of July testing will be conducted to test the viability of this cost saving measure. A decision will be made at the end of July. With the new State CIO starting on August 15, decision-making could be further delayed into the fall.

Industry Standards and Best Practices: IEEE 1849-2016, titled "IEEE Standard for eXtensible Event Stream (XES) for Achieving Interoperability in Event Logs and Event Streams." This standard defines a framework for extracting, sharing, and analyzing event data from various systems to ensure interoperability and consistency in data handling.

Analysis: Meetings have been held with Protech to discuss the data extraction costs. Protech has engaged AWS for options, but AWS indicates the issue is billing-related, not technical. The cost of delivering data for testing is critical for the KEIKI project, but CSEA finds the current costs prohibitive. Discussions with Protech and AWS indicate the need to resolve the billing issue rather than technical challenges. Without a resolution, this issue could impact the project timeline and budget. CSEA continues to engage ETS to negotiate a cost cap and explore alternative solutions.

Recommendation: 2024.07.002.R1 – Continue negotiations with ETS to secure financial support for data delivery.
- Engage in discussions to find a feasible cost structure that aligns with project budgets.
- Ensure clear communication of cost concerns and impacts to ETS.

2024.07.002.R2 – Explore alternative solutions with Protech and AWS.
- Investigate potential cost-saving measures or alternative technical approaches.
- Seek AWS assistance to better understand and manage billing concerns.

2024.07.002.R3 – Improve performance of data extraction programs to minimize timing and associated costs.
- Work with Protech to identify and implement optimizations in the data extraction process.

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.

TERMS

RISK
An event that has not happened yet.

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

Criticality Rating

The criticality ratings are assessed based on consideration of the severity ratings of each related risk and issue within the respective IV&V Assessment Area, 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.

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).

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

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
Technology	2024.03.001	Risk	Moderate	Moderate	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.	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.	**CLOSED:** 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.	Open	04/30/24: CSEA organized a meeting with other Departments in April to exchange information regarding the status of their respective system modernization efforts, specifically those related to the shared mainframe and dependencies. 05/31/24: Accuity closed one recommendation as CSEA is coordinating regular meetings with impacted State of Hawaii agencies to monitor the status of their modernization projects and mainframe operations. CSEA is planning to develop an inventory of interfaces to share at an upcoming meeting with impacted Departments. **06/30/24: CSEA and Protech agreed to develop a list of interfaces categorized into three groups: 1) Axway (source: AWS vs. Mainframe), 2) Mainframe (group of interfaces on the mainframe with departments pointing to Axway), and 3) Cyberfusion. They also decided to share this list at the next monthly meeting with State Departments.** IV&V will continue to monitor the coordination with other State of Hawaii modernization projects.		
Process	2024.03.002	Issue	Moderate	Moderate	Inadequate schedule and resource management practices may lead to project delays, missed project activities, unrealistic schedule forecasts, or unidentified causes for delays.	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.	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.	**Closed**	04/30/24: Project managers started meeting regularly to review the project schedule. The project managers will do a deeper analysis of the upcoming technical tasks, and then recalibrate the project schedule in May. 05/31/24: Protech delivered a draft of the replanned project schedule and analysis for CSEA's feedback and approval. The revised schedule maintains the original Go-Live date. **06/30/24: Issue cloased. The schedule was updated and the 17-day variance was successfully mitigated, ensuring the project remained on track. The project schedule continues to be discussed weekly.** IV&V encourages the CSEA PM to conduct independed reviews of the schedule and project metrics. IV&V will continue to monitor progress made on schedule and resource management practices.	6/30/2024	The schedule was updated and the 17-day variance was successfully mitigated, ensuring the project remained on track. The project schedule continues to be discussed weekly.

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.	**Closed**	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. 04/30/24: Protech will present their testing approach in May. The presentation is important as test scripts are finalized, and system testing is approaching. 05/31/24: Protech's testing approach presentation was pushed back to June. The presentation is critical as test scripts are finalized and system testing begins in June. **06/30/24: Preliminary closed. CSEA acknowledged the risk associated with not having defined UI system requirements. Instead, the test scripts are used as the requirements. The teams collaborate closely and hold regular test meetings to ensure alignment and thorough testing.** IV&V will continue to monitor the clarification of the program development and testing approach.	6/30/2024	CSEA acknowledged the risk of not having defined UI system requirements and addressed it by using test scripts as the requirements. Additionally, the teams collaborated closely and held regular test meetings to ensure alignment and thorough testing. This approach mitigates the risk by ensuring that the testing process is comprehensive and that any issues are promptly identified and resolved through ongoing communication and collaboration.
Process	2024.01.001	Risk	Moderate	Low	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. **CLOSED**: 2024.01.001.R3 - Additional quality metrics and project success metrics should be added to project status reports.	**Closed**	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. 04/30/24: Accuity closed two recommendations. Project status reports continue to be refined and now clearly report tasks that have been rescheduled from the previous week's reporting period. CSEA did not start reporting on success metrics in April as planned. 05/31/24: Accuity decreased the severity rating from Level 2 (Moderate) to Level 3 (Low). The CSEA PM presented some of the project's key success metrics at the May Steering Committee Meeting. High-level pre-delivery testing metrics were provided in May. **06/30/24: Risk closed. As system testing started in June, the team started adding a Weekly Test Report. The report outlines the testing scope, the defects that were retested and validated, and gives a summary of the progress of all test cases.** IV&V will continue to assess the effectiveness of project status reports and meetings.	6/30/2024	Test reports were added to the weekly status meetings. The report contains testing and defect metrics.

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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. **CLOSED:** 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.	Closed	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: Accuity 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. 04/30/24: The CSEA project manager still needs to independently validate the variance and critical path. For monthly steering committee and project status meetings, it would be beneficial for CSEA to take a more active role in communicating their perspective on project progress to stakeholders. 05/31/24: The risk was closed as project management activities are being executed more timely and effectively.	05/31/24	Closed as the project managers are working more collaboratively to share and execute project 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.

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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	8	In the third sentence of the observation, it is incorrect to state that CSEA has received approval to pay for the increased data migration costs. That matter is still under discussion.	CSEA	Report updated to remove the incorrect statement regarding CSEA's approval to pay for increased data migration costs, as the matter is still under discussion.
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