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January 29, 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 <u>http://ets.hawaii.gov</u> (see "Reports").

Sincerely,

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

AND

MONTHLY IV&V REVIEW REPORT

December 31, 2023 | Version 1.0

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Document History

DATE	DESCRIPTION	AUTHOR	VERSION
01/10/24	Monthly IV&V Review Report Draft created.	Julia Okinaka	0.0
01/26/24	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.

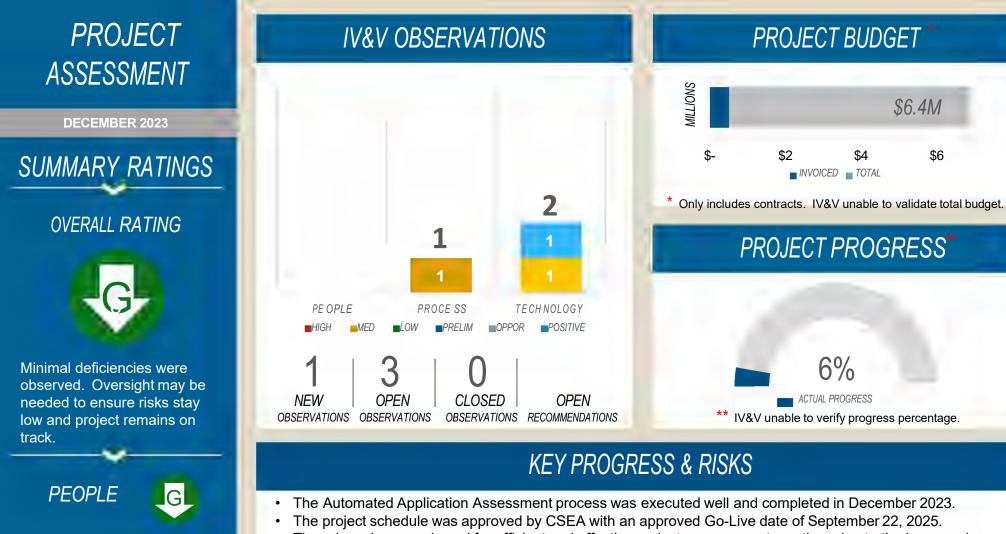
The IV&V Dashboard and IV&V Summary provide a quick visual and narrative snapshot of both the project status and project assessment as of December 31, 2023. Ratings are provided monthly for each IV&V Assessment Area (refer to Appendix A: IV&V Criticality and Severity Ratings). The overall rating is assigned based on the criticality ratings of the IV&V Assessment Categories and the severity ratings of the underlying observations.

PLANNING & ACCOUNTABILITY

"The future depends on what We do in the present."

- Mahatma Gandhi

TESTING



PROCESS

R

HIGH

TECHNOLOGY

CRITICALITY RATINGS

MEDIUM

G

LOW

N/A

- There is an increased need for efficient and effective project management practices due to the increased impact on project execution.
- The Project Schedule still needs to be refined to ensure all tasks are reflected. There are concerns that resources are overallocated, and tasks continue to be shifted or added impacting project resources.

ASSESSMENT & PLAN	INING	1	ORIGINAL ACTUAL	REVISED DELAYED
100	PROGRAM	DEVELOPMENT & TESTING		
	in the second se	SYS INSTALL		* SEPT 22, 2025
		IMPLEMENTATION		GO-LIVE
ASSESSMENT *** DEV				
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.

DECEMBER 2023 · KROM PROJECT

OCT	NOV	DEC	IV&V ASSESSMENT AREA	IV&V SUMMARY
6		•	Overall	The project is making progress, but still needs stronger overall project management and execution to ensure the project stays on track without further delays.
				<i>Project Schedule</i> : The project schedule was approved with a September 22, 2025 Go-Live date. The revised schedule is showing early signs of delays in several tasks and deliverables, but currently does not impact the overall Go-Live date (2023.10.002).
				<i>Project Costs</i> : Protech's revised payment schedule was approved, with no additional overall project costs. Contract invoices received to-date are within total contract costs.
				<i>Quality</i> : Quality metrics were identified in the Project Management Plan and will begin to be monitored and reported on in January 2024.
				Project Success: Preliminary success metrics were identified in the Project Charter. Success criteria should continue to be refined and communicated to the project team.
G	G		People Team, Stakeholders, & Culture	 Project SMEs continue to be engaged in ongoing project activities. Although approved, the project schedule still does not adequately identify all CSEA tasks and individual resource responsibilities, so the availability and capacity of resources required to complete each task is still unclear (2023.10.002). Furthermore, there are concerns that resources are overallocated, and tasks continue to be shifted or added impacting project resources. As Protech's deliverables and activities continue to fall behind the project schedule, the need for
				 additional project support for Protech's Manager should be assessed (2023.10.002). The Monthly Steering Committee Meeting cadence was revised, so the December meeting was skipped, and will resume in January.
				 Project stakeholders external to CSEA had not been identified in the approved Project Management Plan, which includes communication management. CSEA identified external project stakeholders in their Project Charter and plans on revisiting other project plans and activities to determine appropriate communications and engagement.

DECEMBER 2023 · KROM PROJECT

OCT	NOV	DEC	IV&V ASSESSMENT AREA	IV&V SUMMARY
0	•		Process Approach & Execution	 The Project Schedule and Project Management Plan were approved in December. There is an increased need for efficient and effective project management practices due to the increased impact on project execution (2023.10.002). Although the project schedule has some percentage completion, the process to monitor and calculate metrics is unclear. Regular, recurring risk meetings were established in December resulting in more timely identification of risks and mitigation plans. Three business analysis workshops were conducted in December to assist with the development of test scripts. In December, Protech delivered the Performance Metric Standard Reporting DED. Two deliverables are projected to be delayed including the KEIKI System Requirements Definition document and Code and Data Conversion Plan. Preliminary success metrics should continue to be refined and communicated to the project team. Having clearly defined success metrics helps to align the team on the project's objectives.
			Technology System, Data, & Security	 The Automated Application Assessment process was well executed and completed in December 2023 (2023.12.001). The assessment of KEIKI system hardware and software asset requirements is still in progress and lacks a clear plan (2023.11.001). CSEA appointed two dedicated Data System Migration Leads to assist with analyzing existing data system migration requirements. An issue was formally documented related to the lack of information coordination as CSEA is being tasked with redundant information requests that the State has already provided to Protech.* Several technology tasks are delayed including the evaluation of the KEIKI user interface customization, review of security requirements, and delivery of the data extraction programs and JCL. CSEA identified concerns related to current bandwidth limitations with the mainframe datacenter which may impact the ability to migrate large amounts of data. CSEA has a meeting in January with ETS to discuss and develop a plan to address this risk.* The KEIKI system has system interfaces with several State agencies who are also going through their own modernization efforts. Depending on the pace and outcomes of these modernization efforts, the system interfaces and associated testing may be impacted. CSEA has agreed to monitor and exchange information with the relevant agencies through meetings and review this risk quarterly.*

IV&V ASSESSMENT AREAS

People

Process

Technology

OBSERVATION #: 2023.12.001 S

TITLE: PLANNING AND EXECUTION OF AUTOMATED APPLICATION ASSESSMENT PROCESS

Observation: The Automated Application Assessment process was well planned and executed.

Industry Standards and Best Practices: PMI PMBOK provides best practices and guidelines for planning, executing, and managing portfolios of projects, programs, and operations. DMBOK describes the proper planning and execution for data integration, data warehousing, and data conversion, including best practices for project planning and management, data mapping and modeling, testing and quality assurance, and data migration strategies.

Analysis: Protech's partner, Advanced, worked closely with CSEA's technical SMEs and outlined a clear, welldefined 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, datadriven and insightful, and prepared the project team well as they begin the next phase of legacy code and data system migration.

Recommendation: N/A for positive observation.

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.

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

RISK An event that has not happened yet.

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

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.



TERMS

POSITIVE Celebrates high performance or project successes.

PRELIMINARY CONCERN Potential risk requiring further analysis.

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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
EEE 12207-2017	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Software Life Cycle Processes
EEE 24748-1-2018	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Life Cycle Management – Part 1: Guidelines for Life Cycle Management
EEE 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)
EEE 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)
EEE 14764-2021	ISO/IEC/IEEE International Standard for Software Engineering – Software Life Cycle Processes – Maintenance
EEE 15289-2019	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Content of Life Cycle Information Items (Documentation)
EEE 24765-2017	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Vocabulary
EEE 26511-2018	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Requirements for Managers of Information for Users of Systems, Software, and Services
EEE 23026-2015	ISO/IEC/IEEE International Standard – Systems and Software Engineering – Engineering and Management of Websites for Systems, Software, and Services Information
EEE 29119-1-2021	ISO/IEC/IEEE International Standard – Software and Systems Engineering – Software Testing – Part 1: Concepts and Definitions
EEE 29119-2-2021	ISO/IEC/IEEE International Standard – Software and Systems Engineering – Software Testing – Part 2: Test Processes
EEE 29119-3-2021	ISO/IEC/IEEE International Standard – Software and Systems Engineering – Software Testing – Part 3: Test Documentation
EEE 29119-4-2021	ISO/IEC/IEEE International Standard – Software and Systems Engineering – Software Testing – Part 4: Test Techniques
EEE 1484.13.1-2012	IEEE Standard for Learning Technology – Conceptual Model for Resource Aggregation for Learning, Education, and Training
SO/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®
SO/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

SSMENT	OBSERVATION		ORIGINAL	CURRENT							
	ID	TYPE	SEVERITY	SEVERITY	OBSERVATION	ANALYSIS	RECOMMENDATIONS	STATUS	STATUS UPDATE	CLOSED DATE	CLOSURE REASON
ogy	ID 2023.11.001	TYPE Risk	SEVERITY Moderate	SEVERITY Moderate	Complex data system migration	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	 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 	STATUS Open	STATUS UPDATE 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. IV&V to continue to monitor the data system migration process.	CLOSED DATE	CLOSURE REASON
PSS	2023.10.002	Risk	Prelim	Moderate	Untimely project management responsibilities may impact effective project execution.	 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. 	 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. 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. 2023.10.002.R3 – Assess the need for additional Protech resources for project management support. 	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: 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. IV&V will continue to assess project management responsibilities. 		
ble	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 positiv 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	6	The report cites RAID Log item #37, which highlights the lack of information coordination and the redundancy of tasks assigned to CSEA. DDI has responded to this concern by establishing weekly internal meetings between Advanced, DataHouse, and Protech to improve information sharing. Additionally, DDI has discussed this concern internally and seeks to support the State's efforts by reviewing the information and raising questions as needed. Finally, DDI and CSEA continue to work together to resolve any discrepancies identified in any information/data shared.	Protech	Statements and status updates from Protech after the reporting period related to project management, communications management, and information sharing. Progress made on these processes and responsibilities will be reflected in future IV&V reports. No changes made to the December IV&V Report.
3	5 People bullet 3	The SRD was the deliverable that lagged in December 2023, and it relies on a final assessment report. As of the current IV&V report, the validation of the assessment was ongoing, as indicated by the email exchanges between CSEA and Advanced about the in-scope items. This delay is attributable to the need to ensure the collection is complete and as accurate as possible. CSEA continues to work to finalize the collection.	Protech	Statements and status updates from Protech after the reporting period related to the Project Schedule and deliverables. Progress made on deliverables will be reflected in future IV&V reports. No changes made to the December IV&V Report.

	5 People bullet 2	Protech built the project schedule based on similar projects and experience. The schedule is resource loaded by organization and assignments are identified to organizations. Protech gave the State permission to include named resource in the project schedule and to assign tasks directly to State resources. DDI has provided a tool to collect/add new tasks to the project schedule as needed and continue to work with CSEA to fully reflect the project's work assigned to CSEA.	Protech	Statements and status updates from Protech after the reporting period related to project and resource management. Progress made on resource management will be reflected in future IV&V reports. No changes made to the December IV&V Report.
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