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March 29, 2019

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

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

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

Pursuant to HRS section 27-43.6, which requires the Chief Information Officer to submit applicable independent verification and validation (IV&V) reports to the Legislature within ten days of receiving it, please find attached the report the Office of Enterprise Technology Services (ETS) received for the State of Hawaii Department of Accounting and General Services (DAGS) and ETS' HawaiiPay Project.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Douglas Murdock".

DOUGLAS MURDOCK
Chief Information Officer
State of Hawai'i

Attachment (2)



HawaiiPay Project

Department of Accounting and General Services (DAGS)

Phase I Final Report

IV&V Monthly Status Report – **Final**

For Reporting Period: February 1 – 28, 2019

Draft submitted: March 12, 2019

Final submitted: March 18, 2019

Overview

- Executive Summary
- IV&V Findings and Recommendations
- IV&V Status
- Appendices
 - A – IV&V Findings Log & Priority Ratings
 - B – Standard IV&V Inputs
 - C – IV&V Details

Executive Summary

The initial phase of the HawaiiPay (HIP) implementation formally concluded on February 28 and the project has successfully transitioned to the planned maintenance and operations (M&O) phase. The project noted that the primary project objectives (statewide migration off the mainframe system and accurate paychecks at go-live) have been met. Refinements to the HIP solution continue at a steady pace, and ongoing stakeholder needs continue to be addressed. In a subsequent phase, the project expects to continue deploying new functionality related to the recording of Time and Attendance. Though Phase II awaits final approval, the project is moving forward with the necessary planning efforts. Deferred Phase I requirements have either been moved to the Phase II scope of work or prioritized as M&O enhancements. Going forward, IV&V recommends Phase II planning efforts address outstanding risks/issues that could reduce or mitigate stakeholder risk exposure as well as help ensure future project success. IV&V remains concerned with the state's lack of sufficient controls related to the adequate segregation of duties, inter-departmental communication challenges, and controls related to the quality and completeness of interface and other data. IV&V's final Phase I Lessons Learned deliverable may address these and other concerns and could prove useful for future project planning efforts.

Dec	Jan	Feb	Category	IV&V Observations
			Communications Management	The project has made good progress in addressing external communication issues and has recently engaged DOE to address/resolve W2 instruction problems reported in IV&V's previous report. IV&V recommends strategies be developed to address these concerns for future project communications. Further, IV&V recommendations in this regard will be detailed in the upcoming Lessons Learned deliverable.
			Contract Management	The HawaiiPay project team has completed validation of functional and non-functional requirements and will formally close the Phase I contract on 3/15/19. Four project document deliverables, though complete, have not received final signoff.

Executive Summary (cont'd)

Dec	Jan	Feb	Category	IV&V Observations
			Cost and Schedule Management	The project appears to have resolved remaining gaps in understanding of outbound interface requirements that had impacted UH/DOE readiness. Progress continues to be made in addressing potential payroll functional team challenges as the project team continues ongoing efforts to support business organizational change as a result of the new payroll system and processes.
			Human Resources Management	Though some key SI resources have rolled off the project with Phase I closeout, good efforts have been made by both the SI and project leadership to ensure the core (high functioning) project team remains largely intact for M&O and a possible Phase II effort. Key departed SI resources will reportedly be made available on an as needed basis to the M&O project team going forward and departed SI resources will likely rejoin the project team if/when Phase II work begins.
			Knowledge Transfer	The project has accepted the risk of not having a consolidated turnover plan and feels this has been mitigated with the advent of multiple documents/checklists that have been created to ensure effective/efficient turnover to the state. Further mitigation lies in the fact that key SI resources will continue to be available to the state's M&O project team. DAGS continues to make progress in distributing responsibilities to individual DAGS units (e.g. central payroll, accounting, etc.), however, some branches continue to have challenges with some post-go-live responsibilities. These challenges are currently being escalated through DAGS leadership.
			Operational Preparedness	As noted previously, IV&V reported that the project experienced a number of post go-live issues. These issues appear to be caused by routine operational processes. For most of these issues, the project has taken steps to prevent them from reoccurring. However, IV&V noted that some issues related to interfaces are outlined in other IV&V findings.

Executive Summary (cont'd)

Dec	Jan	Feb	Category	IV&V Observations
			Organizational Change Management	Project leadership has made good efforts to mitigate the multiple UH pay statement issue reported previously by IV&V. Talks with UH leaderships could lead to agreement on a single HIP pay statement for UH employees. Though it remains unclear as to UH employee communications with regard to this issue, HIP help desk calls seem to have diminished.
			Project Management and Organization	Project PMO continues to demonstrate strong project management practices. The project conducted an analysis of recent validation problems, including the W2 issues previously reported by IV&V, and developed lessons learned, recommendations, and corrective actions. Recommendations include early agency and divisional involvement with issues specific to their processes. Other efforts are being made by the project to develop queries and metrics to validate data being sent from other agencies to assure future accurate and efficient year-end processing.
			Quality Management	IV&V noted an ongoing concern that may require changes to processes and methods when developing and testing both internal and external third-party interfaces. IV&V also recommends enhancements or changes to the controls that help to ensure submitted data sets are complete, accurate and timely.

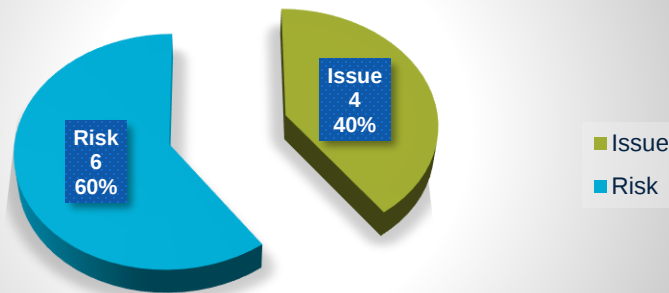
Executive Summary (cont'd)

Dec	Jan	Feb	Category	IV&V Observations
			Requirements Management	The HawaiiPay project team has completed validation of functional and non-functional requirements and made good progress in dispositioning (deferred, no longer needed, etc.) Phase I requirements deemed out-of-scope. Still, some project document deliverables, though complete, have not received final signoff.
			Risk Management	IV&V has not seen notable progress related to the finding in this category. Though the project can assure that individual departments will not be able to access other departments data, IV&V remains concerned that adequate and appropriate controls, related to the segregation of duties, the protection of assets as well as the prevention of fraud, are not in place for the HawaiiPay solution. For example, IV&V remains concerned that DOE user permission requests seem excessive and not in keeping with segregation of duties and the principle of least privilege. The lack of formal security controls continues to leave the project powerless to deny requests for excessive permissions that could expose private data (PII) and increase the risk of fraud and identity theft. IV&V recommends that controls be implemented that are designed to prevent end users from completing systems transactions that are not in the best interest of the State.

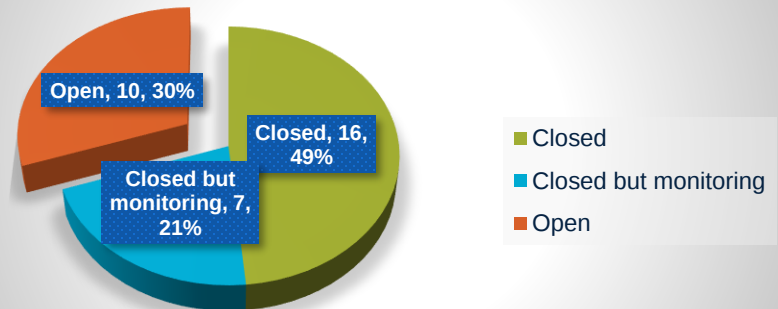
IV&V Findings and Recommendations

Phase I will close out the project with 10 outstanding open findings (4 issues and 6 risks). Of the open findings, 3 are related to Quality Management. The following graphs breakdown the risks by status, type, and category/priority.

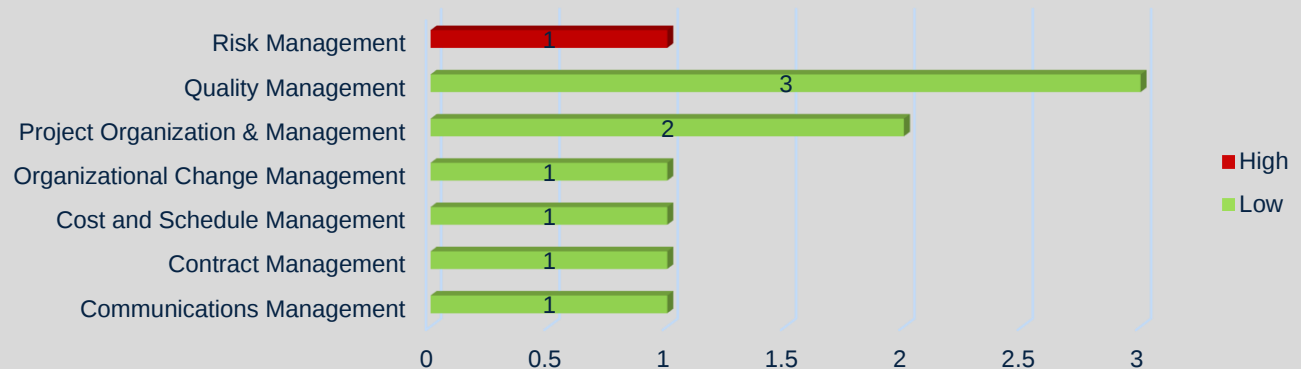
Open Risks/Issues by Finding Type



Risk Status Summary



Open Risks/Issues by Category/Priority



IV&V Findings and Recommendations (cont'd)

Summary of IV&V Open Risks/Issues Criticality

Category		Finding Title	Criticality
Communications	Risk	27 – Communications to external entities may be ineffectual	Low
Contract	Risk	2 - Non-functional contract requirements not tracked	Low
Cost & Schedule	Issue	22 – Lack of departmental readiness could impact project budget/schedule	Low
Risk Management	Risk	31 - Lack of adequate formal controls related to user access and segregation of duties	Hi
Project Organization & Management	Risk	30 - Strategy for data management not finalized	Low
	Issue	32 - End of year processing complexity	Low
Quality Management	Risk	19 - Inadequate interface development and testing coordination	Low
	Issue	25 - Insufficient data validation, checks and balances	Low
	Risk	26 - DHRD users' access to shared tables could result in corrupt payroll data	Low
Organizational Change Management	Issue	33 – UH dual pay statements can create confusion	Low

IV&V Findings and Recommendations (cont'd)

Communications Management



#	Key Findings	Criticality Rating
27	Risk - Communications to external entities may be ineffectual: While IV&V has observed good efforts by the project to provide reasonable levels of communications to external entities (departments, TPA, banks, etc.), some communication have been misinterpreted or mishandled and have not produced their intended result.	Low

Recommendations	Progress
• Enact overt and persistent efforts to address communications that have proven to be ineffective and with organizations that have known communication challenges.	In progress
• Over-communicate important messages as well as messages that are likely to be missed. For example, multiple emails can be sent to reiterate important messages or restate them in increasingly simple or overt terms.	In progress
• Reassess existing communications and provide further clarification to external entities to ensure clear understanding and provide guidance on future communications.	In progress

IV&V Findings and Recommendations (cont'd)

Contracts Management



#	Key Findings	Criticality Rating
2	Risk - Non-functional contract requirements not tracked: When non-functional requirements are not proactively monitored as the project progresses, there is increased potential that contract performance gaps may be identified too late in the project's timeline resulting in schedule delays or unmet contract requirements. The Requirements Traceability Matrix (RTM) does not include non-functional requirements and the project does not regularly report on contract performance metrics.	Low

Recommendations	Progress
Create a checklist of non-functional contract requirements to be satisfied in order to actively monitor and measure progress, and close-out the contract	Complete

IV&V Findings and Recommendations (cont'd)

Cost and Schedule Management



#	Key Findings	Criticality Rating
22	Issue - Lack of departmental readiness could impact project budget/schedule: Departments transitioning to the Hawaii Information Portal (HIP) as part of the HawaiiPay project are expected to perform readiness activities and meet specified milestone deadlines. If any department does not transition to HIP by their designated rollout date, the HawaiiPay project schedule and budget could be negatively impacted.	Low

Recommendations	Progress
• Ensure readiness deadlines/milestones are clearly communicated to appropriate stakeholders on a regular basis.	Complete
• Document missed readiness deadlines, communicate the possible consequences of missed deadlines clearly to department leaders in a timely manner to help ensure leadership is not surprised and has ample opportunity to respond and manage the risks.	Complete
• Consider implementing a strategy of over-communication for departments that may have communication challenges.	Complete
• Coordinate regular readiness discussions between HawaiiPay and departments that may have readiness challenges.	Complete

IV&V Findings and Recommendations (cont'd)

Risk Management



#	Key Findings	Criticality Rating
31	Risk - Lack of adequate formal controls related to end user provisioning and segregation of duties: The project currently lacks sufficient project security policies to guide, among other things, departmental user permissions. Controls currently exist to ensure departments only have access to their employee's data and the project has made efforts to warn departments about the risks of granting excessive permissions to their users. However, since there is no enforced PoLP policy, the project is currently granting all departmental access requests.	High

Recommendations	Progress
Create/implement a HIP administrative user agreement for administrative users who are responsible for determining permissions for departmental users. The agreement should assure that administrative users clearly understand their additional responsibilities, security best practices, guidelines, PoLP, segregation of duties, and risks involved with giving users excessive permissions.	In progress
Formally notify department leadership of requests that appear to be excessive and assure clear understanding of the risks involved; request departments rollback permissions that seem excessive	In progress
Recommend implementation of controls designed to prevent end users from completing systems transactions that are not in the best interest of the State (see detailed recommendations for risk #31 in the Findings Log)	In progress

IV&V Findings and Recommendations (cont'd)

Project Management & Organization



#	Key Findings	Criticality Rating
30	Risk - Strategy for data management not finalized: Without a finalized data management strategy, data policies and inter-agency agreements may not adequately address the needs of all entities with responsibilities for governing data which may result in ineffective data management and remediation processes.	Low
32	Issue - End of year processing complexity: Payroll related end of year processing typically involves a significant number of activities to close out the year. Now that group 3 rollout has been moved to December, the project will be faced with performing unforeseen end of year processes that include combining legacy and HIP data to produce W2 and other reports. Project resources will be further constrained by the additional burden of a major Group 3 release that has already proven to be time consuming and problematic.	Medium

Recommendations	Progress
• Early extensive detailed planning utilizing a consolidated schedule that includes CRT and state activities	Complete
• Work with appropriate DAGS governance processes to develop an over-arching strategy for data management across the departments	In progress
• Work with impacted departments to codevelop and implement data management policies in support of the HawaiiPay solution	In progress

IV&V Findings and Recommendations (cont'd)

Quality Management

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#	Key Findings	Criticality Rating
19	Risk - Inadequate interface development and testing coordination: The lack of a functioning process and signoff to coordinate both parties regarding the development and comprehensive end to end testing of interfaces may cause unnecessary risk. IV&V has observed many process improvements for coordinating and tracking interfaces in Group 2.	Low
25	Issue - Insufficient data validation, checks and balances: Data validation processes and procedures to ensure data accuracy are insufficient and have resulted in data errors during payroll processing.	Low
26	Risk - DHRD users' access to shared tables could result in corrupt payroll data: Inadequate controls to manage access to update payroll data by both DHRD and Payroll Division users could result in payroll data corruption.	Low

Recommendations	Progress
Establish enhanced validation processes to ensure interface updates are thoroughly validated prior to applying updates to production system data. Validations could include queries to validate all the business rules have been met, i.e. all key data is present, all required dependent data elements are present and contain valid values, etc.	In progress
Explore methods to secure critical payroll data that DHRD does not need permissions to edit.	In progress

IV&V Findings and Recommendations (cont'd)

Organizational Change Management



#	Key Findings	Criticality Rating
33	Issue – UH dual pay statements can create confusion: UH is producing their own customized pay statements which could contradict HIP pay statements and confuse users as well as introduce a legal risk to the state. Despite project and State Attorney General advisement, UH has decided to continue offering their employees the alternative pay statement that calculates earnings based on fiscal year instead of calendar year. HIP pay statements calculate total earnings based on calendar year. The project has requested review of data UH will use to produce their custom pay statements.	Low

Recommendations	Progress
Explore providing targeted communications (only visible to UH users) on the ESS site and/or HIP pay statements.	In progress
Project team continue to pursuit open dialog with UH to not only discuss alternatives to customized pay statements but also UH directed employee OCM communications to assure understanding of the reason for differences.	In progress

IV&V Status

The activities that PCG performed to inform the IV&V report for the current period are listed below. Upcoming activities are also included. For specifics, see Appendix B – IV&V Standard Inputs.

IV&V Project Milestones

Milestone / Deliverable Description	Baseline Due Date	Draft Submitted	Final Submitted	Approvals / Notes
IV&V Management Plan (IVVP)	4/6/18	3/18/18	3/29/18	Approved
IV&V Work Plan (Schedule)	4/6/18	3/18/18	3/29/18	Approved
Initial IV&V Assessment	5/9/18	5/18/18	6/8/18	Approved
June IV&V Monthly Status Report (MSR)	5/30/18	7/10/18	7/31/18	Approved
Deployment Audit Report – Grp 2	7/20/18	8/5/18	8/23/18	Approved
IV&V Management Plan (IVVP) Update (v. 3.0)	n/a	8/15/18	8/22/18	Approved
July IV&V Monthly Status Report (MSR)	8/10/18	8/17/18	9/4/18	Approved
End of Go Live Implementation Milestone Report – Grp 2	8/24/18	9/28/18	10/31/18	Approved
August IV&V Monthly Status Report (MSR)	10/5/18	9/7/18	9/10/18	Approved
September IV&V Monthly Status Report (MSR)	10/5/18	10/5/18	10/9/18	Approved
October IV&V Monthly Status Report (MSR)	11/7/18	11/7/18	11/19/18	Approved
November IV&V Monthly Status Report (MSR)	12/7/18	12/5/18	12/13/18	Approved
Deployment Audit Report – Grp 3	12/21/18	12/24/18	1/7/19	Approved
IV&V Management Plan (IVVP) Update (v. 4.0)	2/12/19	2/12/19	2/25/19	Approved
End of Go Live Implementation Milestone Report – Grp 3	1/18/19	1/18/19	1/18/19	
December IV&V Monthly Status Report	1/17/19	1/17/19	2/12/19	Approved
January IV&V Monthly Status Report	2/25/19	2/25/19	2/25/19	
February IV&V Monthly Status Report	3/12/19			
Lessons Learned & Final Recommendations Report	3/12/19			

IV&V Status (cont'd)

- **IV&V activities performed during the reporting period:**
 - Attended Monthly Payroll & TLM Modernization Project Executive meeting
 - Attended PCAB meeting
 - Attended Daily Scrums
 - Attended RIO-D meeting
 - Attended HawaiiPay State/CRT Project meeting
 - Project Team Risk Review sessions
 - October IV&V Monthly Status report deliverable and review
 - Attended UH/HawaiiPay meetings
 - Attended DOE/HawaiiPay meetings
- **IV&V next steps in the coming reporting period:**
 - IV&V Monthly Status Report
 - Group 3 Go-Live Implementation Audit report

Appendix A – IV&V Criticality Ratings

This appendix provides the details of each finding and recommendation identified by IV&V. Project stakeholders are encouraged to review the findings and recommendations log details as needed.

See definitions of Criticality Ratings below:

Criticality Rating	Definition
	A high rating is assigned if there is a possibility of substantial impact to product quality, scope, cost, or schedule. A major disruption is likely and the consequences would be unacceptable. A different approach is required. Mitigation strategies should be evaluated and acted upon immediately.
	A medium rating is assigned if there is a possibility of moderate impact to product quality, scope, cost, or schedule. Some disruption is likely and a different approach may be required. Mitigation strategies should be implemented as soon as feasible.
	A low rating is assigned if there is a possibility of slight impact to product quality, scope, cost, or schedule. Minimal disruption is likely and some oversight is most likely needed to ensure that the risk remains low. Mitigation strategies should be considered for implementation when possible.

Appendix B – IV&V Standard Inputs

This appendix identifies the artifacts and activities that serve as the basis for the IV&V observations.

To keep abreast of status throughout the HawaiiPay project, IV&V regularly:

- **Attends the following meetings**
 - Daily Scrum
 - Weekly State/CRT (Joint) Project Meeting
 - Weekly Risks-Issues-Opportunities-Decisions (RIOD) Meeting
 - Bi-Weekly Project Change Advisory Board (PCAB)
 - Monthly Payroll & TLM Modernization Project Executive Meeting
- **Reviews the following documentation**
 - HawaiiPay - Executive Committee Agendas
 - State/CRT (Joint) Meeting Notes
 - State Project Schedule (in Smartsheet)
 - Risks-Issues-Opportunities-Decisions (RIOD) Workbook
 - CherryRoad BAFO and Contract
- **Utilizes Eclipse IV&V® Base Standards and Checklists**



PCG Eclipse IVV
Checklists

Appendix C – IV&V Details

- What is Independent Verification and Validation (IV&V)?
 - Oversight by an independent third party that assesses the project against industry standards to provide an unbiased view to stakeholders
 - The goal of IV&V is to help the State get the solution they want based on requirements and have it built according to best practices
 - IV&V helps improve design visibility and traceability and identifies (potential) problems early
 - IV&V objectively identifies risks and communicates to project leadership for risk management
- PCG IV&V Methodology
 - Consists of a 4-part process made up of the following areas:
 1. **Discovery** – Discovery consists of reviewing documentation, work products and deliverables, interviewing project team members, and determining applicable standards, best practices and tools
 2. **Research and Analysis** – Research and analysis is conducted in order to form an objective opinion.
 3. **Clarification** – Clarification from project team members is sought to ensure agreement and concurrence of facts between the State, the Vendor, and PCG.
 4. **Delivery of Findings** – Findings, observations, and risk assessments are documented in this monthly report and the accompanying Findings and Recommendations log. These documents are then shared with project leadership on both the State and Vendor side for them to consider and take appropriate action on.

Note: This report is a point-in-time document with findings accurate as of the last day in the reporting period.



Id	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status	Closure Reason	Closed Date	Risk Owner
2	Non-functional contract requirements not tracked	If CherryRoad's contract is not actively monitored and tracked, specifically for non-functional requirements, as the project progresses, contract performance gaps may be identified too late in the project's timeline which could result in a schedule delay or unmet contract requirements.	The Requirements Traceability Matrix (RTM) does not include non-functional requirements and the project does not have a separate mechanism for tracking contract performance. The project processes \$0 change orders and, therefore, relies on the Change Advisory Board (CAB) to monitor changes to functional requirements. It is unclear how and when non-functional requirements are being met.	• Create a checklist of non-functional contract requirements that CherryRoad must satisfy in order to close-out the contract and actively monitor progress - perhaps begin with the SI's Attachment 8 - Technical Requirements to identify those non-functional requirements to be validated by the state outside of the project's Implementation Tracker. • Project team should take charge of validation.	2/28/19 - The HawaiiPay team reported completion of requirements validation though IV&V has yet to review and/or sign-off on 4 remaining document deliverables. Requirements have been appropriately dispositioned (including items deferred to phase 2). Requirements being deferred to Phase 2 will be included in a contract amendment. 1/31/19 - The PMO has established a clear process for validating non-functional requirements and continues to make good progress towards completing this task. 12/12/19 - The project has shifted responsibility for requirements tracking and validation from DAGS Contract division to the HawaiiPay team. Hence, IV&V is reducing this risk from Medium to Low. 11/28/18 - While a December Group 3 go-live seems to be progressing well, IV&V is still recommending contingency planning to manage any disruption to go-live that could necessitate a schedule and contract extension. IV&V is still unable to determine requirements tracking status as communication challenges between the project and the DAGS Contracts division continue. As contract closure draws near, the project may have challenges validating fulfillment of requirements before contract closure and the SI may have little time to respond to gaps in meeting requirements to the projects satisfaction. 10/31/18 - DAGS Contracts Division is responsible for tracking project requirements. However, IV&V has been unable to get status on requirements tracking as there seems to be communication challenges between the project and the Contracts division. Contracts Division has been unresponsive to some project requests for information, some requests were made over 2 months ago. Recommend project escalate these requests to DAGS leadership. 9/26/18 - No progress. 8/31/18 - IV&V met with the DAGS Contract Lead in August and the project provided IV&V with a spreadsheet created by DAGS contract unit in May 2018 entitled "PR T18 compare to P03 final - incl R5R6R7" which demonstrates the state's efforts in tracking and validating contract requirements separate from the project's design, development, and implementation teams. However, this spreadsheet has not been updated since May 2018 and appears to only include reporting requirements. It is unclear if any of these reporting requirements are considered non-functional. IV&V is awaiting a response from DAGS contracts office.	Contract Management	Risk	Low	Open			Michael
19	Inadequate interface development and testing coordination	The lack of a functioning process and signoff to coordinate both parties regarding the development and comprehensive end to end testing of interfaces may cause unnecessary risk.	It is unclear if each party responsible for the complete end to end testing of an interface has the capacity and capability to complete detailed testing. There does not appear to be any method for the project to get assurance that the testing is planned and executed as needed. To date, there seems to be a low volume of feedback from TPAs and approval of TPA readiness lacks rigorous evaluation from the project. For example, contacts for interfaces need to be confirmed as having the appropriate IT skills and availability to perform the required tasks in the project's timeline.	• Establish a communications plan and signoff procedure that ensure all parties clearly understand the expectation related to interface testing and signoff that they have the capacity to complete the testing, document defects, re-test and signoff that the interface is fully functional. • Establish enhanced validation processes to ensure interface updates are thoroughly validated prior to applying updates to production system data.	2/18/19 - Outstanding UH/DOE interface defects and/or modification requests seem to have been resolved. The project has reported recent ERS confusion over HawaiiPay interface(s). Despite multiple discussions and recent escalation to division leadership, parties seem unable to come to agreement on interface requirements. The project reports that ERS seems challenged to understand new processes and is intent on keeping interfaces the same as when they were interfacing with the previous mainframe system, whereas HawaiiPay seeks to modernize/improve interfaces to align with new system processes. Project attempts to engage in working sessions to resolve differences seem unproductive. 1/31/18 - The project noted further improvements to outbound interface data from UH. However, this may not prevent processing failures or timing issues related to the delivery of interface data. Post go-live interface issues continue to be reported by UH/DOE. 12/31/18 - Outbound (from HIP to UH/DOE) interface validation continues be a challenge for UH/DOE. Despite project efforts to mitigate this risk, UH/DOE were remise to provide timely responses to project provided test file validation activities. Unclear if DOE/UH will require further interface changes going forward. However, all indications point to a successful inbound interface validation and testing, therefore, IV&V is lowering this risk to a Low. 11/30/28 - IV&V noted that an enhanced process to ensure all the interface processes were refined and the results tested by all appropriate parties, was implemented. This enhanced process helped to ensure that all parties involved were focused on the same key issues. 10/31/18 - A number of issues regarding key interfaces for group 3 remain open. The project noted that DOE has passed functional tests on some of the inbound interfaces, but further testing remains necessary for others. 9/30/18 - CRT has sought to increase the quality of interfaces through full volume in/outbound interface testing, improved interface mechanics, and created sandbox environment for testing.so departments don't have to wait for the next parallel to retest. 9/26/18 - Interface specifications, testing, validation, and defect resolution continues to improve. However, a limited number interface issues continue to crop up. For example, the FAMIS interface has proven to be especially problematic with recurring failures; recent failures stem from missing UAC	Quality Management	Risk	Low	Open			Ken

Id	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status	Closure Reason	Closed Date	Risk Owner
22	Lack of departmental readiness could impact project budget/schedule	Departments transitioning to the Hawaii Information Portal (HIP) as part of the HawaiiPay project are expected to perform readiness activities and meet specified milestone deadlines. If any department does not transition to HIP by their designated rollout date, the HawaiiPay project schedule and budget could be negatively impacted.	Departments transitioning to HawaiiPay have each been assigned to one of three rollout groups and the project's budget and planned coordination activities allow for little to no flexibility in group rollout dates. The HawaiiPay project contract and budget is currently limited to the three rollout groups, departments who have not transitioned by the final rollout group will need to find alternative means for producing payroll outside of HIP. While details of the impact of any department not transitioning to HawaiiPay in their planned group is unclear, there will likely be a negative impact to DAGS and the HawaiiPay project schedule and budget. Any department unable to transition to HIP would likely either request extended use of the existing DAGS mainframe or seek non-DAGS payroll alternatives. If departments are allowed to continue on the mainframe payroll system, the planned benefits of moving off this antiquated and problematic system may not be fully realized. DAGS would then be faced with having to plan for and acquire additional resources for maintaining two payroll systems (HIP and the mainframe system). Departments that opt out of DAGS payroll services altogether would have little time to plan for, procure and implement their own payroll system. Further, DAGS, and/or the HawaiiPay project team, will likely have limited time and resources to assist departments with any alternative as they will be in the midst of HawaiiPay group implementation. IV&V was informed that additional funding for the project will likely not be approved by the state legislature, therefore expansion of HawaiiPay contract scope to accommodate departments that are unable to meet readiness deadlines may not be possible.	• Ensure readiness deadlines/milestones are clearly communicated to department leaders. • Provide clear expectations regarding readiness activity deadlines and important milestones to each department. • Document missed readiness deadlines, communicate the possible consequences of missed deadlines clearly to department leaders in a timely manner to help ensure leadership is not surprised and has ample opportunity to respond and manage the risks. • Consider implementing a strategy of over-communication for departments that may have communication challenges. • Coordinate regular readiness discussions between HawaiiPay and departments that may have readiness challenges.	2/20/19 - The project team met with DOE to resolve issues with W2 instructions that led to DOE's decision to provide no W2 instructions to their employees. Other topics were discussed and processes clarified. 1/31/19 - Project reported DOE failed to pass on project provided W2 instructions to their employees creating confusions and an increase in HIP Service Center calls. DOE has stated they made this decision due to an error in the provided W2 guide/instructions, however, the error seemed minor and not impactful. Unclear why DOE would not correct guide and send out or provide their own guide to send to their employees to reduce confusion. 12/31/18 - While the realization of this risk (mostly due to DOE/UH missteps) did impact the project and require a significant level of project team effort (including late night and weekend work) to respond to missteps, the project team mitigation steps to avert delays to the revised Group 3 schedule proved successful. It appears the primary readiness risk is related to outbound interface validation/testing which is being tracked in Risk #19. IV&V is lowering this risk to a Low. 11/28/18 - UH leadership remains concerned with previous parallel results that identified some inaccuracies. However, the project is making good progress towards quickly fixing bugs and documenting expected variation in payroll numbers. Unclear if UH leadership fully understands false positives (known variances) which are not a reflection of system problems and this seems to have created a lack of confidence in the system accuracy. 11/28/18 - UH has made the decision to implement Multi Factor Authentication (MFA) and will require their payroll users to enroll in MFA before they can access HIP. MFA implementations can be challenging, especially for non-technical users. Combining rollout of MFA with their transition to HIP could increase UH readiness risks. The project has advised against UH combining MFA with HIP go-live. 10/31/18: The project has made good efforts to implement IVV recommendations, still, UH/DOE continues to have challenges with complying with project instructions. UH/DOE do not fall under the authority of the SOH Executive branch and therefore cannot be compelled to follow project directives. The project remains concerned with UH lack of responsiveness to project communications and that UH pre-go-live employee payroll communications have yet to be broadly distributed. Unclear why UH system interface concerns have only recently been communicated to the project, leaving the project little time to assist with resolving their issues before go-live in December. While DOE/DAGS communications have improved, DOE continues to make requests of the project that seem to distract from go-live activities; DAGS has now set clear boundaries with DOE on what the project can and cannot assist with given their constrained capacity due to go-live activities. 10/17/18 - UH and DOE not able to provide a functional pass for all integration testing. The project has made multiple attempts to clarify functional pass criteria for both UH and DOE. Contingency plan to mitigate the risk of lack of departmental outbound interface testing/validation is for the project to perform G23m their own detailed	Cost and Schedule Management	Issue	Low	Open			Michael
25	Insufficient data validation, checks and balances	Data validation processes and procedures to ensure data accuracy are insufficient and have resulted in data errors during payroll processing.	Insufficient data validation processes and procedures resulted in system errors including inaccurate paychecks and reports. Recently HawaiiPay ran (legacy) payroll for two pay periods in a row that included a significant number of incorrect deductions for UH employees. The state reported that already constrained HawaiiPay mainframe IT staff were in the midst of preparations for a major software release when the Janus supreme court ruling came down with no allowable timeframe to implement system changes, requiring an immediate update, creating additional activities to make the next payroll run. Errors may have been avoided if proper data validation processes and procedures (checks and balances) had been in place that could have caught the errors prior to the payroll run. Extensive efforts were required to manage and resolve the errors and reimburse affected employees. Many validation activities are performed manually with limited or no automated support. Overreliance on manual validation processes not only increase error rates but also increase the risk associated with over-allocating key resources (see risk #5, "Impact of project resource attrition"), risk #4, "Group 2 and 3 planning and execution activities overlap", and risk #6, "Insufficient project resources").	• Revisit existing data validation processes and procedures (automated and otherwise) to identify which should be implemented/enhanced and prioritized based on criticality and impact to payroll processing and stakeholder confidence. Once identified, an implementation plan can be created and implemented based on available resources to mitigate this risk. • Automated data validation support can not only increase data accuracy but also reduce the level of effort of manual processes for already constrained project resources. • Explore the feasibility of having the agencies and TPA's validate the final payroll run data before payroll is run.	2/28/19 - The project has performed some analysis of recent validation problems, including the W2 issues previously reported by IV&V and developed lessons learned, recommendations, and corrective actions going forward. Recommendations include involving the agencies early on with issues specific to their processes. Other efforts are being made by the project to develop queries and metrics to validate data being sent from other agencies. 1/31/19 - This issue was again realized during this reporting period. The W2 production process saw multiple instances of data validation/checks/balance deficiencies. DAGS Payroll operations group and project testers failed to identify W2 errors that required W2 reprints. The SI documented the following issues: Issue #1: Last character of Box 15 Employer's state ID number didn't print Root Cause: Online Configuration of W2 form had box set to length of 17 rather than 18 Action Taken: Updated online configuration to length of 18 Impact: This issue was significant enough for the State to reprint W2s Issue #2: Box 12R contained amounts Root Cause: Deduction Code FM200 (FSA Medical) mapped to Box 12R Action Taken: Removed mapping of FM200 to Box 12R Impact: This issue was significant enough for the State to reprint W2s Issue #3: Incorrect Payroll Number printed on many W2 Root Cause: Custom print routine only updated Payroll Number when changing Distribution Action Taken: Corrected custom print program to update Payroll Number for every employee printed Impact: This issue did not justify a reprint of W2s. Additional instruction was provided to Departments explaining the issue Issue #4: W2s did not print during reprint Root Cause: Consent to not receive W2 was rolled out to EES after original print completed. EE who consented did not generate W2 in reprint. Action Taken: Processed "Consent" run that printed W2s for all EE who had W2 consent Impact: This issue required additional reprint for those who had consented	Quality Management	Issue	Low	Open			Ken

Id	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status	Closure Reason	Closed Date	Risk Owner
26	DHRD users' access to shared tables could result in corrupt payroll data	Inadequate controls to manage access to update payroll data by both DHRD and Payroll Division users could result in payroll data corruption.	DHRD had access and the privileges to make a change which could have corrupted payroll data since there are no agreed upon controls for managing the shared payroll data. In this instance, the error was caught by Central Payroll before it could impact a production payroll run. Making uncontrolled changes to core payroll data can lead to inaccurate paychecks, loss of data integrity, and time wasted spent tracing the source of data corruption. The project has already reported an instance where DHRD users modified Job data tables which would have generated inaccurate or missing paychecks if the error had not been discovered before payroll processing. Further, it is unclear if efforts to train DHRD users to avoid data corruption have been effective or if DHRD had fully participated in HawaiiPay training efforts. The project is currently in the process of exploring options for controlling edits to key tables to prevent payroll data corruption.	• Explore methods to secure critical payroll data that DHRD does not need permissions to edit. • If securing the data via permissions is not a viable option, recommend engaging DHRD leadership to come up with a plan to effectively train DHRD users to avoid corrupting payroll data. Additionally, explore methods to audit impactful DHRD edits and establish appropriate checks and balances to ensure corrupt data does not impact payroll. • Provide documentation to DHRD users (or "cheat sheets") that provide clear guidance when editing sensitive tables that could impact payroll. • Immediately establish a cross divisional governance working group to define and document process and data sharing governance (including rules, guidelines, executive decision making processes, and user guides). These could be outlined in an MOA, agreed to and signed by both DAGS and DHRD.	2/28/19 - No change. 1/31/19 - No change. 12/31/18 - The state technical team is currently making efforts to plan for permission changes to address the DHRD access risk (as well as other permissions issues) post-implementation (post Group 3 go-live); SI is assisting with refinements to the security/permissions model. DHRD currently utilizes a significant number of customized roles that could pose a security and long-term M&O risk due to the difficulty in maintaining (and controlling access given by) multiple custom roles. The SI is working with the state to develop a permissions/security model that supports these efforts. 11/28/18 - The project conducted an additional training session for DHRD and is planning to reduce some DHRD permissions over time as they may have some permissions they do not need. 10/25/18 - There is still no clear agreement on data governance between DHRD and HawaiiPay (e.g. who can change what). Also, many users have non-standard (custom) profiles which could lead to users inadvertently getting access to data they shouldn't and lead to data corruption. Still, IV&V will reduce this risk status to "Low" as DHRD has demonstrated a better understanding of and better control over changes that could impact payroll and HawaiiPay has made efforts to monitor DHRD changes. Further, the project is close to standing up a Enterprise Configuration Management Board	Quality Management	Risk	Low	Open			Michael
27	Communications to external entities may be ineffectual	While IV&V has observed good efforts by the project to provide reasonable levels of communications to external entities (departments, TPA, banks, etc.), some communication have been misinterpreted or mishandled and have not produced their intended result.	The project has experienced two different occasions of bank sending inaccurate communications to its state employee members. As part of Group 1 preparations, one credit union sent a letter to all their state employee members describing HawaiiPay changes, even though changes were only applicable to Group 1 employees. During Group 2 preparations, American Savings Bank (ASB) sent a similar errant letter to all of their state employee members when, in fact, only Group 2 employees would be impacted. The project has also noted instances where departmental leadership was unaware of their staff's activities and communications with HawaiiPay. This can create confusion and lead to poor leadership decisions that could negatively impact the project as well as distract HawaiiPay leadership as they manage misunderstandings. Failure to provide overt, persistent, and clear communications to key stakeholders can lead to confusion, frustration, and misunderstanding for external entities with inherent communication challenges and can inadvertently result in a loss of confidence in the project.	• Enact overt and persistent efforts to address communications that have proven to be ineffective and with organizations that have known communication challenges. • Over communicate important messages as well as messages that are likely to be missed. For example, multiple emails can be sent to reiterate important messages or restate them in increasingly simple or overt terms. • Reassess existing communications and provide further clarification to TPA's to ensure clear understanding and provide guidance on future communications. • Provide template letters to TPA's that provide clear communications that TPA's can modify to meet their needs. • Obtain agreements with each department on the process for HawaiiPay to review all HawaiiPay related communications sent to employees. • Insist departments and banks forward all of their HawaiiPay related state employee communications to HawaiiPay for review prior to sending.	2/28/19 - No change. 1/31/19 - Project reported DOE failed to pass on project provided W2 instructions to their employees creating confusions and an increase in HIP Service Center calls. DOE has stated they made this decision due to an error in the provided W2 guide/instructions, however, the error seemed minor and not impactful. Unclear why DOE would not correct guide and send out or provide their own guide to send to their employees to reduce confusion. 12/31/18 - All indications point to a successful and timely Group 3 go-live where this risk was sufficiently mitigated by the project. In the end, project efforts to mitigate this risk seem successful as enrollment participation met expectations and did not pose a significant risk to the perception of project success. Help desk capacity was sufficient to manage the increased number of questions due to any external entity communication missteps. IV&V has downgraded this risk to a Low. 12/21/18 - Though the project seems to have made every reasonable attempt to bring understanding of new payroll processes to Group 3 stakeholders, some seem to (at times) struggle to fully understand them, despite repeated explanations. 11/28/18 - As go-live draws near, UH/DOE seem to have stepped up employee HawaiiPay communications. UH has instituted enrollment drives and their project-led train-the-trainer events have been well attended. UH has created a web site for employees with HawaiiPay instructions which has been reviewed and validated by the project for accuracy. Shane team (Leanne/Mark) to work on this 10/31/18 - Unclear if UH will be conducting enrollment drives as they have not been transparent with their OCM/employee go-live communications plans. As the December go-live draws near, the project may be unable to plan for the required level of support to assist UH in preparing for enrollment drives due to lack of UH feedback. UH failure to provide their employees with timely and accurate enrollment and go-live instructions could lead to confusion and increase enrollment errors at go-live, which could reflect negatively on the project. IV&V will continue to monitor. 10/24/18 - The project has reached agreement with DOE for providing train the trainer support to DOE to assist with enrollment drives and accurate communications to DOE employees. Still, the project remains concerned that DOE has either misconstrued or ignored project guidance on DOE employee	Communications Management	Risk	Low	Open			Michael

Id	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status	Closure Reason	Closed Date	Risk Owner
30	Strategy for data management not finalized [lack of enterprise governance (Change Management Board)]	Without a finalized data management strategy, data policies and inter-agency agreements may not adequately address the needs of all entities with responsibilities for governing data which may result in ineffective data management and remediation processes.	The project has received feedback from other agencies, notably DHRD, regarding data permissions and processes that need to be implemented or enforced which may or may not be in line with the project's vision or approach. The implementation of the enterprise payroll solution, HIP, warrants enterprise-wide policies and governance of the system, it's data, and it's outputs.	- Work with appropriate DAGS governance processes to develop an over-arching strategy for data management across the departments - Work with impacted departments to codevelop and implement data management policies in support of the HawaiiPay solution.	2/28/19 - Now that DAGS leadership is confirmed, efforts to formulate an ECMB are moving forward. Until the ECMB is operational, the project's PCAB meeting will remain the forum for change management and governance discussion. 1/31/19 - No change. 12/31/18 - DAGS leadership decision to implement an ECMB is currently on hold until DAGS leadership appointment is confirmed (both Comptroller and CIO). The ECMB proposal that was submitted by the project includes a draft administrative directive for a Data Governance Committee. 11/28/18 - Despite project leadership efforts to institute the ECMB, department leadership has indicated they may not be ready to participate at this time. 10/24/18 - ECMB plans have progressed. This committee is the first step towards change management governance as well as improving data governance. 9/26/18 - The project has initiated plans to create an Enterprise Change Management Board (ECMB) which is intended to shore up governance on many levels including data management. ECMB is awaiting comptroller approval. 8/31/18 - The project initiated a monthly meeting with Payroll and HR SMEs across departments to share information regarding system updates, identify lessons learned, establish best practices, and provide status on project's progress. This forum is likely to help identify data management requirements for inclusion in the project's strategy development efforts with DAGS governance.	Project Organization & Management	Risk	Low	Open			Michael
31	Lack of adequate formal controls related to end user provisioning and segregation of duties	The project currently lacks sufficient project security policies to guide, among other things, departmental user permissions. While the HIP User Access Request form references a pdf that describes roles and based on user duties, the project seems to lack the authority to deny departmental requests for excess permission requests and permissions that are not in keeping with segregation of duties. Typically, state and/or departmental security policies will offer guidance for project security policy development that guide system permissions, roles, rules and governance. For example, if state/departmental/system policy supports the principle of least privilege (PoLP) and segregation of duties, the project would have the basis for denying requests for excess permission requests. Controls currently exist to ensure departments only have access to their employee's data and the	Without thorough state/departmental security policies and procedures, the project could lack sufficient guidance in creating project security policies/procedures. Without documented state/departmental/project PoLP policies, the project may not have sufficient authority to deny excessive departmental access requests. Departments users could be given higher levels of access than they need, which could lead to unnecessary exposure of PII data as well as identity theft, fraud, unfavorable audit reviews, and inadvertent corruption of data.	- Create/implement a HIP administrative user agreement for department administrative users who are responsible for determining permissions for departmental users. The agreement should assure that administrative users clearly understand their additional responsibilities, security best practices, guidelines, PoLP, and risks involved with giving users excessive permissions. - Formally notify department leadership of requests that appear to be excessive and assure clear understanding of the risks involved; request departments rollback permissions that seem excessive - Recommend implementation of controls designed to prevent end users from completing systems transactions that are not in the best interest of the State. These control objectives should include: • Controls that, where possible, prevent unauthorized access to system functionality that would violate standards and or policy related to adequate segregation of duties. This would include a matrix that outlines HawaiiPay user roles that conflict with the control objective. • A mechanism or process to identify user provisioning requests that include conflicting roles. • Definition of permissible variances to this control objective, which outline not only the criteria required to allow a variance, but also a process or workflow to ensure the variance is known and approved by agency leadership. • A secondary detective control that could identify, behaviors not in line with the expected activity for which the variance was originally granted i.e. reports listing transactions that seem unusual, unnecessary or inappropriate.	2/28/19 - Seems little to no progress has been made in reduction of excessive DOE permissions. The project is currently considering mitigation strategies which include informative communications to users to increase awareness of security concerns as well as activities to seek departmental validation that appropriate roles have been given to users. It remains unclear who is responsible for these and other multi-departmental controls. HawaiiPay is not always notified of inter-departmental transfers which could leave users with excessive permissions if their permissions are not updated to reflect their new role. Concerns have been raised that some users could have excessive permissions that would give them unnecessary access to DAGS Data Mart data. Initial reviews of Data Mart access lists include several instances of inactive users accounts and users that have transferred to other departments without permissions being updated. IV&V recommends DAGS move quickly to establish controls to mitigate these risks. 1/31/19 - No change. 12/31/18 - It appears DOE intends to revoke excessive permissions but it remains unclear how extensive these reduced permissions will be. IV&V continues to recommend an annual audit process and quarterly reviews to drive departments to compliance with best practices to reduce security risks. ETS annually engages an external firm to perform a security audit, which could be leveraged to motivate departments to shore up excessive permissions. 11/28/18 - The Project intends to request DOE roll back any excessive permissions once Group 3 go-live is complete. The project making plans to develop fraud detection queries. 10/31/18 - The project received state CISO confirmation that the state does not have a PoLP policy. State CIO and CISO has drafted a memo to DOE to acknowledge understanding of segregation of duties and PoLP. However, the memo does not seem to make it clear that several DOE permission requests seem excessive and seem to violate these principles. The project has made some progress in raising user awareness of security and privacy concerns by adding segregation of duties policy guidance to their security access request form and will consider adding similar language to the systems login/splash page. The project has also drafted an NDA that will require signature from all payroll users. DAGS responsibilities regarding protection of assets or prevention of fraud remain unclear. 9/30/18 - DOE user permission requests seem excessive and not in keeping with segregation of duties and the principle of least privilege. The projects lack of formal security controls has left the project	Risk Management	Risk	High	Open			Michael

