HawaiiPay Project
Department of Accounting and General Services (DAGS)

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

For Reporting Period: September 1 – 30, 2018

Draft submitted: October 2, 2018
Final submitted: October 5, 2018

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Executive Summary

The project has determined that a October Group 3 go-live is no longer feasible due to DOE/UH challenges meeting parallel testing timelines and data quality issues. The contingency plan for a December go-live is now being executed; this will incur additional cost as well as a significant strain on project resources due to the increased complexity of combining legacy and new system data for year-end processing. The risk involved in this undertaking could potentially be further exacerbated given that Group 3 go-live also occurs in December and could be hampered by the holidays and other year-end activities. Group 3 collaboration, communications and milestone achievements have improved, and the project has been able to leverage the extension to improve testing, data quality, and to reduce the risk of further Group 3 challenges. However, IV&V's overall project rating for this reporting period remains Red in light of the overlap of significant/critical year-end activities with Group 3 rollout, as well as risks related to end user provisioning issues that still need to be resolved.

Jul	Aug	Sept	Category	IV&V Observations
M	M	M	Communications Management	Without active participation in department communications the project is limited in its ability to ensure accurate communications prior to go-live and to effectively address issues stemming from dissemination of inaccurate communications by the departments. Though the project demonstrates mature communication management and best practices, this category rating remains Medium since the project has less quality control over Group 3 communications. Despite project requests to review all HawaiiPay related DOE employee communications before distribution, DOE has not always done so. While it's unclear if DOE's inaccurate communications have since been corrected, they have committed to submitting future communications for project review. Departments that fail to provide accurate HawaiiPay information to their employees could negatively impact Group 3 rollout.
L	L	L	Contract Management	The project has chosen to execute the contingency option for Group 3, which moves the group's deployment to run concurrent with year-end processing. IV&V recommends that the state review the contract requirements for year-end processing, service level agreements, and operational support to determine if there are any inputs the project should consider as it approaches the Group 3 deployment date (e.g., items for inclusion in a go-live readiness checklist). IV&V also recommends that the DAGS contract office begin preparing for a potential contract amendment to help mitigate the risk that Group 3 may be further delayed.

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Executive Summary (cont'd)

July	Aug	Sept	Category	IV&V Observations
(H)	(H)	(M)	Cost and Schedule Management	DOE/UH challenges to comply with project directives has led to execution of a contingency plan that will push Group 3 go-live to December and add to the project cost. Going forward, the project will closely track each DOE/UH required task and institute escalation procedures for missed due dates. The additional time is being leveraged for data cleanup and other activities that should increase the likelihood of successful parallel test(s). Thus far, all but two Group 3 interfaces have been successfully tested. Therefore, IV&V has lowered this category risk to a Medium. Still, this schedule shift will put an unexpected strain on project resources. IV&V has added risk #32, *End of Year Processing Complexity*, that speaks to the unexpected added complexity involved in having to combine legacy and HIP data for year-end processing in the same month as Group 3 go-live. Adding this to an already constrained project staff year-end workload increases the risk of errors and the risk that project staff could be quickly overwhelmed by unexpected events.
(L)	(L)	(L)	Human Resources Management	IV&V continues to monitor overtaxed resource effectiveness as well as over reliance on 3-4 key project resources. Now that Group 3 rollout has been pushed to December, project resources will be asked to perform both year-end and Group 3 go-live activities, putting an additional strain on already overtaxed project resources. The project continues to add help desk staff in support of Group 3, and is in the process of executing a staffing plan for system turnover. IV&V is not aware of plans to increase staff to manage the high number of year-end activities. IV&V will continue to monitor progress on succession planning, knowledge transfer, and knowledge management planning.
(L)	(M)	(M)	Knowledge Transfer	IV&V continues to monitor risks related to the lack of a detailed turnover and M&O planning. The state is performing already executing production jobs and the SI is planning on retaining 2-3 project team members for M&O. However, the project is currently reliant on 2 SI resources that have deep system knowledge and provide strong operational leadership, and will likely not be available during M&O; critical problems have been averted in large part due to their efforts. Lack of good turnover planning for knowledge transfer from these and other SI resources could lead to significant payroll disruptions once they are no longer actively involved in HIP operations.
(L)	(L)	(L)	Operational Preparedness	IV&V noted that, as recommended in previous reports, the project has taken advantage of a schedule extension to automate some data cleanup/validation and resolutions to the defects discovered during Parallel testing. This could help to reduce the level of effort during the cutover. This may also aid in ensuring the timing for cutover is known and not require as much last-minute effort. IV&V will continue to monitor for additional automation of manual cutover and validation processes.

Executive Summary (cont'd)

Jul	Aug	Sept	Category	IV&V Observations
L	L	L	Organizational Change Management	As Group 3 rollout draws near, the project has stepped up efforts to assure HawaiiPay information sent by banks to state employees is accurate and effective. The project continues to be proactive with their OCM communications and continues to improve OCM materials to Group 3 departments. Still, the project has little control over the effectiveness of departments OCM efforts. Unclear if DOE/UH will utilize OCM techniques (Townhall Meetings, Enrollment Drives) that proved successful for Groups 1 & 2. Ineffective execution of OCM by departments could lead to customer/employee frustration and reflect negatively on the project.
L	M	M	Project Management and Organizational	The project has initiated their contingency plan for Group 3 rollout in December due to DOE/UH readiness concerns. The project responded quickly to initiate detailed planning activities including creating a more detailed, web accessible project plan to track UH/DOE required activities and instituted escalation procedures for due dates that are not met. IV&V has therefore closed finding #29, *Expedited Contingency Planning*. IV&V opened risk #31, *End of year processing complexity*, that speaks to the significant number of activities occurring at year-end and calls for early detailed project and resource capacity/allocation management.
M	M	M	Quality Management	IV&V noted additional interface testing iterations are being completed for the DOE/UH. Each iteration of testing is focused on specific subsets of data. The outcome may significantly aid in the early discovery and resolution of critical interface processing errors at go-live. IV&V has recommended that a final iteration include all data that is expected in each specific interface. This can help to ensure that any issues related dependencies between records are resolved.

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Executive Summary (cont'd)

Jul	Aug	Sept	Category	IV&V Observations
L	L	L	Requirements Management	This category currently has no open findings, however, IV&V continues to track a related Risk #2 that addresses concerns around tracking of non-functional requirements. IV&V will continue to monitor requirements management processes and the project's use of the SI's proprietary ALM tool. Budget risks related to out-of-scope requirements have thus far been mitigated as the SI has implemented them at no additional cost. However, new requirements associated with the extended Group 3 go-live schedule will involve additional cost. IV&V will monitor management of added requirements.
L	L	M	Risk Management	The project continues to actively mitigate risks identified across project implementation process areas. For example, the project has plans to stand up a Change Management Board (CMB) to address governance issues including reviewing change requests at an enterprise level, providing policy direction to departments, and normalize system behaviors. The project continues to provide embedded (remote) resources to assist Group 3 departments which resulted in significant progress in the resolution of interface and data issues. Still, IV&V has opened risk #32, *Lack of adequate formal controls related to end user provisioning and segregation of duties*, as 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 has left the project powerless to deny requests that could expose private data (PII) and increase the risk of fraud and identity theft.
L	L	L	Systems Architecture and Design	IV&V continues to recommend a well planned and executed knowledge transfer between the project and CRT Managed Services after each go-live. This may aid in meeting the expected service level agreements (SLA) and reduce the Managed Services dependency on key project resources regarding the updated configuration and current state technical infrastructure details. IV&V did not note any key support issues that were unresolved during this reporting period.

IV&V Findings and Recommendations

As of this reporting period, PCG has identified a total of 14 open findings (4 issues, 10 risks). Of the open findings, 4 are related to Quality Management. Two new findings were recorded. The following graphs breakdown the risks by status, priority, and category.

Risk Status Summary

- Closed
- Closed but monitoring
- Open

Closed, 12, 37%
Open, 14, 44%
Closed but monitoring, 6, 19%
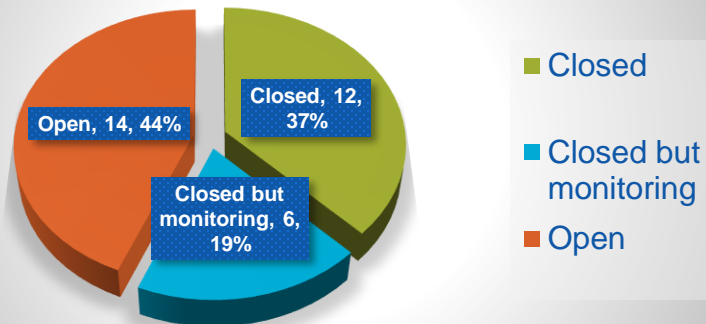
Open Risks/Issues by Finding Type

- Issue
- Risk

Issue 4 29%
Risk 10 71%
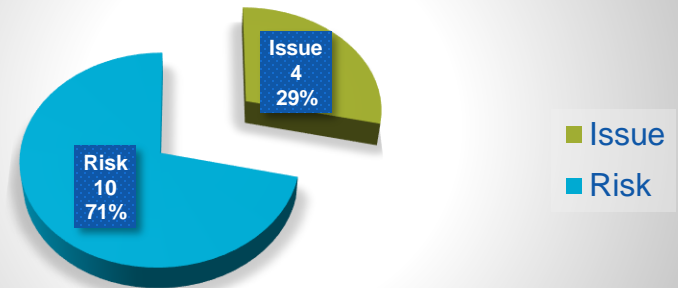
Open Risks/Issues by Category/Priority

Category	Low	Medium
Risk Management		1
Quality Management	1	3
Project Organization & Management	1	1
Operational Preparedness	1	
Knowledge Transfer		1
Human Resource Management		1
Cost and Schedule Management		2
Contract Management	1	
Communications Management		1

0   0.5   1   1.5   2   2.5   3   3.5   4

- Low
- Medium

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IV&V Findings and Recommendations (cont'd)

#	New Findings	Category
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. 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 project has made efforts to warn departments about the risks of granting excessive permissions to their users. However, because there are no formal controls, the project is currently granting all departmental access requests. Previously this was not an issue because departments (Group 1/2) aligned with general accepted practices in keeping with PoLP and segregation of duties. Group 3 seems to have challenges complying with generally accepted practices. The project was only recently made aware of a state standard for segregation of duties and has yet to determine changes to their user provisioning process. 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 security 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.	Risk Management

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IV&V Findings and Recommendations (cont'd)

#	New Findings	Category
32	**Risk - 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. Project will implement a combined CRT/state project plan going forward. Combining data from legacy and HIP for end of year processing/reporting increases the complexity to end of year processing. This untested process and other end-of-year activities occurring in parallel with Group 3 rollout activities during the end of year holiday season could lead to project resources becoming quickly overwhelmed, degrade the overall quality of these activities, and increase the risk of mistakes/errors. IV&V has already identified risks that could be exacerbated by this situation, including insufficient project resources (#28), overreliance on key resources (#5), and excessive number of manual go-live processes (#7).	Project Organization & Management

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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**	Med
Contract	Risk	**2 - Non-functional contract requirements not tracked**	Low
Cost & Schedule	Issue	**22 – Lack of departmental readiness could impact project budget/schedule**	Med
	Risk	**4 - Group 2 and 3 planning and execution activities overlap**	Med
Human Resource	Risk	**28 - Lack of sufficient resources**	Med
Knowledge Transfer	Issue	**23 - Lack of detailed turnover plan**	Med
Operational Readiness	Issue	**7 – High number of manual processes at cutover**	Low
Risk Management	Risk	**31 - Lack of adequate formal controls related to user access and segregation of duties**	Med
Project Organization & Management	Risk	**30 - Strategy for data management not finalized**	Low
	Risk	**32 - End of year processing complexity**	Med
Quality Management	Risk	**18 - Increasing parallel testing defect resolution scope**	Low
	Risk	**19 - Inadequate interface development and testing coordination**	Med
	Issue	**25 - Insufficient data validation, checks and balances**	Med
	Risk	**26 - DHRD users' access to shared tables could result in corrupt payroll data**	Med

Note: P. Concern = Preliminary Concern

IV&V Findings and Recommendations (cont'd)

Communications Management (M)

#	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.	Medium

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
• Request external entities forward all of their HawaiiPay related state employee communications to HawaiiPay for review prior to sending.	In progress

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IV&V Findings and Recommendations (cont'd)

Contracts Management   L

#	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	Not started

IV&V Findings and Recommendations (cont'd)

Cost and Schedule Management (M)

#	Key Findings	Criticality Rating
4	**Risk - Concurrent execution and production support activities for Group Implementations**: Executing implementation and support tasks for multiple deployment Groups running in parallel may result in less efficient use of project resources and cause an overall delay if new tasks are introduced later in the project.	Low
22	**Risk - 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.	Medium

Recommendations	Progress
• Ensure readiness deadlines/milestones are clearly communicated to appropriate stakeholders on a regular basis.	In progress
• 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.	In progress
• Consider implementing a strategy of over-communication for departments that may have communication challenges.	In progress
• Coordinate regular readiness discussions between HawaiiPay and departments that may have readiness challenges.	In progress

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IV&V Findings and Recommendations (cont'd)

Human Resource Management L

#	Key Findings	Criticality Rating
28	**Risk – Lack of sufficient resources**: The project does not have dedicated Leads filling key roles needed during the implementation phase, resulting in existing resources serving multiple roles which may impact their overall effectiveness or timely execution of tasks. Current designated Leads often focus on execution and rely on the Project Management team to support strategy and management activities.	Medium

Recommendations	Progress
• Engage in succession planning and identify near-term knowledge transfer activities.	In progress
• Develop a Knowledge Management strategy to help ensure project knowledge (tacit and otherwise) is not lost when staff leave the project or state employment	Not started
• Evaluate which project resources are needed to allow for dedicated strategic leadership in key project areas and to alleviate project resources with multiple responsibilities	In progress

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IV&V Findings and Recommendations (cont'd)

Knowledge Transfer (M)

#	Key Findings	Criticality Rating
23	**Issue - Lack of detailed turnover plan**: The lack of a transition plan can lead to poor transition planning, important turnover activities can get missed, and can lead to stakeholder confusion since they are left ill-equipped to effectively maintain the system once the vendor has left the project.	Medium

Recommendations	Progress
• Request the SI utilize detailed checklists for turnover to ensure an effective turnover to the state and that nothing is overlooked.	Not started
• The state immediately draft and take ownership of a turnover plan and request the SI review and offer guidance.	Not started
• Assign turnover tasks to individuals and require task signoff by task owners once they validate tasks have been effectively completed.	In progress
• Utilize readiness checkpoints and key performance indicators (KPI's) to monitor readiness effectiveness and report to project leadership. KPI's can be utilized to assure a timely and effective system turnover as well as provide project leadership an opportunity to shore up efforts when turnover efforts are not achieving expected results.	Not started
• Request the SI update relevant documents to ensure an effective turnover to the state for M&O.	In progress

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IV&V Findings and Recommendations (cont'd)

Operational Preparedness (L)

#	Key Findings	Criticality Rating
7	**Risk - High volume of manual processes at cutover:** The number of manual processes that need to be executed during the cutover window and post implementation for future Group deployments may grow to a level of effort that cannot be accomplished during the designated timeframes thereby causing a delay in the implementation schedule. The project is reaching out to Agencies 60 days before go live and providing them instructions for required data cleanup prior to go live (e.g., social security number mismatches in Central Payroll). It is unknown if the time provided will be enough for all Agencies to complete within the implementation schedule.	Low

Recommendations	Progress
• Append the cutover checklist with detailed descriptions of how to execute the task (as if for a back-up resource) and ensure that all dependencies between cutover tasks are identified and have designated contacts	Not started

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IV&V Findings and Recommendations (cont'd)

Risk Management   (M)

#	Key Findings	Criticality Rating
31	Risk - Lack of adequate formal controls related to end user provisioning and segregation of duties (NEW)	Medium

Recommendations	Progress
• Work with the state CISO to identify security and data protection policies applicable to HIP and formulate a department security/data protection policy as well as a HIP system security/data protection policy • Establish and document a departmental and thorough HIP security governance guidelines and procedures • 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. • Formally notify department leadership of requests that appear to be excessive and assure clear understanding of the risks involved. • Request state CISO reach out to DOE CISO to seek agreement on best practices for user permissions and provisioning going forward.	Not started

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IV&V Findings and Recommendations (cont'd)

Project Management & Organization (M)

#	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	**Risk - End of year processing complexity (NEW)**	Medium

Recommendations	Progress
• Define and execute a Pilot run of end of year activities	Not started
• Early extensive planning utilizing a consolidated schedule that includes CRT and state activities	In Progress
• Work with appropriate DAGS governance processes to develop an over-arching strategy for data management across the departments	Not started
• Work with impacted departments to codevelop and implement data management policies in support of the HawaiiPay solution.	Not started

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IV&V Findings and Recommendations (cont'd)

Quality Management   (M)

#	Key Findings	Criticality Rating
18	**Risk - Increasing parallel testing defect resolution scope:** An increasing number of manual workarounds to resolve defects discovered during parallel testing may cause delays during the production cutover or confusion for end users who require supplemental training regarding work around functionality. It is unclear if all the workarounds are documented in the cutover plan and schedule.	Low
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.	Medium
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.	Medium
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.	Medium

Recommendations	Progress
• Establish a communications plan and signoff procedure that ensure all parties clearly understand interface testing expectations and signoff that they have the capacity to complete the testing, document defects, re-test and signoff that the interface is fully functional.	In 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
• Where possible, add automated resolutions to defects/issues discovered during Parallel Testing. Ensure any additional manual resolutions steps are documented in the cutover plan and assessed for expected level of effort, dependencies and overall effect on the cutover timeline.	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)	04/06/18	03/18/18	03/29/18	Approved
IV&V Work Plan (Schedule)	04/06/18	03/18/18	03/29/18	Approved
Initial IV&V Assessment	05/09/18	05/18/18	06/08/18	Approved
June IV&V Monthly Status Report (MSR)	05/30/18	07/10/18	7/31/18	Initial assessment delay pushed monthly report to next period
Deployment Audit Report – Grp 2	07/20/18	8/5/18	8/23/18	PCG onsite week of July 16
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)	08/10/18	8/17/18	9/4/18	Approved
End of Go Live Implementation Milestone Report – Grp 2	08/24/18	9/28/18		
August IV&V Monthly Status Report (MSR)	10/05/18	9/7/18	9/10/18	Approved
IV&V Management Plan (IVVP) Update (v. 4.0)	TBD			
Deployment Audit Report – Grp 3	TBD			
End of Go Live Implementation Milestone Report - Grp 3	TBD			
Final IV&V Monthly Status Report	02/19/19			
Lessons Learned & Final Recommendations Report	TBD			

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IV&V Status (cont'd)

- **IV&V activities performed during the reporting period:**

  - Attended Group 2 Cutover Plan Review meeting
  - Provide briefing for Monthly Executive meeting
  - 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 session
  - Go Live Implementation Report – Group 2
  - August IV&V Monthly Status report deliverable and review

- **IV&V next steps in the coming reporting period:**
  - IV&V Monthly Status 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
H	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.
M	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.
L	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.

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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.

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Id	Identified Date	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status
2	5/17/2018	**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.	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. 8/9/18 - While initially the SI reported that non-functional requirement were being carefully tracked by the DAGS contracts office, IV&V has not been provided evidence that this is happening. IV&V is awaiting response from DAGS contracts office. 7/26/18 - CRT provided Attachment 8 - Responses to Technical Requirements - Oracle Confidential file to demonstrate their tracking for non-functional requirements which are not included in the Implementation Tracker. 6/8/18 - IV&V has not observed progress towards mitigating this risk.	Contract Management	Risk	Low	Open
4	5/17/2018	**Concurrent execution and production support activities for Group Implementations**	Executing implementation and support tasks for multiple deployment Groups running in parallel may result in less efficient use of project resources and cause an overall delay if new tasks are introduced later in the project.	Concurrently planning and executing tasks for both Groups 2 and 3, which are running in parallel, may result in less efficient use of project resources and cause an overall delay if new tasks are introduced later in the project. For example, IV&V observed confusion regarding whose responsibility it was/is to monitor production logs. An error occurred and was eventually resolved but project resources had to react and divert time to research and remediate the production issue.	• Update the schedules Group 3 with tasks and lessons identified from the Groups 1 and 2 implementations • Finalize new baseline schedule for Group 3 which confirms that all the tasks and deliverables are achievable in prescribed timeframes • Identify which tasks are production vs. project and determine the resources and processes needed to address each • Begin developing the procedures that are needed to support production operations and finalize the M&O Plan	9/26/18 - The recent project extension has allowed additional time for Group 2 stabilization activities. The project will also leverage the additional time to identify opportunities for process improvement to simplify and reduce the level of effort for both M&O and Group 3 rollout tasks. However, IV&V has opened a related risk #32, *End of Year Processing Complexity*, that brings attention to the fact that Group 3 rollout and end-of-year processing will occur concurrently, which will add more complexity and additional overlap of activities. Therefore, IV&V has raised this to a Medium risk. 8/31/18 - In response to instances of insufficient coordination and validation with production payroll processing (for Groups 1 and 2) which caused errors in paychecks that needed to be corrected in future payroll runs, IV&V has observed the project narrowing its focus on defining the resources and processes needed to support production operations. The project has initiated discussions with the DAGS and ETS leadership to develop the strategy which will guide the succession planning of roles and responsibilities from project to operations resources. This risk is related to IV&V risk #23 regarding a Turnover Plan. 8/14/18 - DAGS continues strategize to mitigate this risk. 7/31/18 - DAGS met with DOE on July 31 and Parallel Testing for Group 3 has been pushed out (yet to be rescheduled) until after Group 2 Payroll is complete (Friday, August 3) due to concerns and constraints that a key resource would become overwhelmed. 6/8/18 - Development tasks are ongoing and the team continues to identify requirements and/or processes through UAT and OCM activities which need to be re-reviewed or re-addressed. Further Group 2 training begins next week concurrent to Round 2 Parallel testing.	Cost and Schedule Management	Risk	Medium	Open

Id	Identified Date	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status
7	5/17/2018	High volume of manual processes at cutover	The number of manual processes that need to be executed during the cutover window and post implementation for future Group deployments may grow to a level of effort that cannot be accomplished during the designated timeframes thereby causing a delay in the implementation schedule.	During the cutover and post implementation a number of manual processes are executed to produce the appropriate conversion and configuration of data needed to operate the system. While avoiding manual processes is unavoidable, since some are needed to ensure the proper sequencing of activities and to avoid post implementation pre-notes and paper checks, the timeframes for manual processing are constrained to data conversion dependencies. During Group 1 deployment, the pilot and smallest of the three deployments, these processes were able to be executed in a timely manner. However, new data and functional anomalies were identified during Group 1 deployment and additional manual processes have been added to the rollout schedules for future Groups 2 and 3. It is unknown at this time since these groups involve much larger end user communities, whether, in the aggregate, all manual processes will be able to be executed during the cutover and post implementation windows. Further, the project is strategically reaching out to Agencies less than 60 days in advance of go live and providing them instructions for required data cleanup prior to go live (e.g., social security number mismatches in Central Payroll). These pre-go-live activities are not directly under the control of the project since they need to be performed by external project stakeholders and it is unknown if the time provided will be enough for all Agencies to complete within the implementation schedule.	• Append the cutover checklist with detailed descriptions of how to execute the task (as if for a back-up resource) and ensure that all dependencies between cutover tasks are identified and have designated contacts • Automate manual processes where possible	9/26/18 - CRT has made good progress towards automating some manual processes and have added 21 additional validation reports. For example, a process was created to better validate UH/DOE inbound HR data that allows them to send targeted HR files that CRT processes and sends back error details for UH/DOE to troubleshoot/cleanup. This will likely improve conversion as well as parallel testing results. 9/19/18 - CRT reported additional efforts are underway to reduce then number of manual processes at cutover. 8/31/18 - Until parallel testing has been completed for Group 3 departments, the project is unable to evaluate the known scope of manual processing that may be required to complete cutover activities. IV&V will continue to monitor progress of cutover planning for Group 3. 7/31/18 - IV&V observed the number of manual processes increase during the cutover period for Group 2. Recent UPA deduction interface errors have triggered new manual processes for validation. 6/8/18 - Though the project focuses on identifying and sequencing the cutover tasks appropriately, IV&V has not observed progress towards mitigating the risk of cutover tasks not being able to complete during the timeframe.	Operational Preparedness	Issue	Low	Open
18	5/17/2018	Increasing parallel testing defect resolution scope *(high number of parallel defects)*	An increasing number of manual workarounds to resolve defects discovered during parallel testing may cause delays during the production cutover or confusion for end users who require supplemental training regarding work around functionality.	A continuing number of defects discovered during Parallel testing are being rectified with manual workaround. It is unclear if all the workarounds are documented in the cutover plan and schedule. The project should plan to ensure that all defect resolutions are prioritized and tracked in the cutover plan and that manual workarounds are resourced with appropriate staff. Further, as function work arounds are identified for end users, they may or may not be receiving supplemental training regarding work around functionality.	• Where possible, add automated resolutions to defects/issues discovered during Parallel Testing. • Ensure any additional manual resolutions steps are documented in the cutover plan and assessed for expected level of effort, dependencies and overall effect on the cutover timeline.	9/26/18 - CRT has made good progress towards automating some data validation processes that have increased the overall quality of incoming data, thereby reducing the number of manual workarounds needed to address test failures. For example, a process was created to better validate UH/DOE inbound HR data, that allows them to send targeted HR files that CRT processes and sends UH/DOE error details so they can troubleshoot/cleanup. This will improve conversion as well as parallel testing error rates as HR data has been the source of many parallel test failures. The project contingency plan for poor round 3 parallel results includes instituting an additional internal parallel test (agencies would not need to be involved). This would also serve to test parallel test defect resolution. UH efforts to improve HR data quality has increased the projects confidence in a successful final round of UH parallel testing. 8/31/18 IV&V noted that the number of issues discovered during Parallel Testing that require manual resolution may be increasing as the population for each go live group increases. The effort required to resolve these issues during the go live cutover may cause unnecessary risk to the timeline. This Preliminary Concern is being upgraded to a risk. .7/31/18 - IV&V observed the project successfully manage the testing defect resolution scope for Group 2; however, the number of potential defects that require manual resolution is not yet known for Group 3. The total scope of manual activities may still become too time consuming for the cutover timeframe. 6/8/18 - The Cutover Planning is very detailed for steps and workarounds identified during parallel.	Quality Management	Risk	Low	Open

Id	Identified Date	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status
19	5/17/2018	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.	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 codes. The project is working with CRT to manage these problems and resolve FAMIS interface issues. Other interfaces have been problematic due to their inherent complexity. For example, HHSC interfaces are run through multiple systems (HIP, ETS mainframe, and DOH) before they are finally consumed by HHSC. CRT has had difficulty mimicking mainframe processing that to produce output the mimic legacy data, but has made recent progress to resolve these issues. Still other interfaces, like EUTF, have proven problematic due to EUTFs limited ability to correct their SSNs due to limitations of their antiquated systems. Finally, the role of interface problem reporting, escalation of defects to CRT, and logging of defects to ServiceCloud (help desk ticketing system) continues to performed HawaiiPay PM which is not typically a PM responsibility. 8/31/18 - IV&V noted that additional resources have been assigned to assist with interface development and testing for DOE and UH. The deployment of these resources appears to have had a positive effect on the process, but it remains unclear if the interfaces can be completed in time to ensure through testing prior to Group 3 go live. 7/31/18 - Although IV&V observed significant improvement in interface development and testing procedures, a number of errors were reported in the UPA interface. These issues may have been caused by a lack of clear and comprehensive documentation regarding the operational processes required to generate the correct interface data. When relying on human interaction, documented procedures can help mitigate the possibility of human error. Best practice is to have documented procedures and a thorough validation process for each interface prior to updating production data. Stakeholder confidence in the HawaiiPay project's ability to consistently deliver accurate payroll processing for their constituents may have been diminished as a result of these processing errors. IV&V will update this risk priority/severity to Medium during the next reporting period.	Quality Management	Risk	Medium	Open
22	6/15/2018	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. • Request the SI offer departments that are struggling to provide prerequisite files for UAT/Parallel testing, a technical resource to offer in-person guidance and assistance to their technical staff.	9/26/18 - Some UH single sign on (SSO) issues remain unresolved. The project has reported that UH continues to be unresponsiveness at times to project communications. IV&V will continue to monitor. 9/26/18 - Despite project requests to review all HawaiiPay related DOE employee communications before distribution, DOE has not always done so. DOE employees have reported some of these inaccurate communications to HawaiiPay help desk. DOE has stated they have corrected these communications. More recently, the project initiated communications with the DOE Public Information Officer who has since committed to a better communications plan and to submitting future employee communication for project review prior to distribution. Departments that fail to provide accurate HawaiiPay information to their employees could negatively impact readiness. 9/24/18 - The project has created a more detailed, web accessible project plan to track UH/DOE required activities and instituted escalation procedures for due dates that are not met. Good progress has been made towards Group 3 interface testing/validation, all but 2 have received a testing "pass" status. CRT resources continue to be embedded (now remotely) with DOE/UH technical staff which continues to improve productivity and communication for group 3 go-live preparation activities. 9/20/18 - There seems to be some confusion over the reason Group 3 had to be pushed to December. DOE has reported to their board that it was the projects choice; however, the project maintains that it was due to DOE multiple missed deadlines and communication challenges. 9/14/18 - DOE seems more engaged with HawaiiPay activities and communications seem to have improved. DOE has agreed to standing bi-monthly calls with HawaiiPay project team that includes their technical staff. As DOE December rollout draws near they will institute daily 30-minute calls. 9/10/18 - This risk has been realized, as the project has officially pushed Group 3 rollout to December and will execute a contingency plan (this is actually the 2nd contingency plan executed by the project). Funding for the additional costs will come from execution of an option in their existing CRT contract. IV&V has upgrade this finding from a risk to an issue. 8/29/18 - The project has informed IV&V that due to delays in DOE/UH activities and other issues, DOE round 2 parallel test and UH round 1 parallel have been delayed. Hence, a October/November Group 3 rollout is at risk and will be difficult achieve. Contingency plans are being developed in parallel for a possible January Group 3 rollout. 8/21/18 - DOE has required that project communications be funneled through a single point of contact (their PM). Communications that have gone through this individual have often been misinterpreted or misconstrued; communications often seem unnecessarily debated and unproductive. IV&V has observed	Cost and Schedule Management	Issue	Medium	Open

Id	Identified Date	Title / Summary	Finding Description	Analysis and Significance	Recommendation	Updates	Category	Type	Priority	Status
23	6/15/2018	Lack of detailed turnover plan	The lack of a detailed turnover plan may lead to insufficient planning and execution of important turnover activities which could lead to stakeholder confusion and cause a delay in project closure or transitioning of system support responsibilities to appropriate state staff.	Turnover plans typically describe the detailed activities involved in transitioning a new system to the new owners, usually in the form of detailed checklists that assign accountability to individuals responsible for ensuring activities get done and are validated. Turnover plans are typically utilized to ensure that important transition details are not overlooked and are effectively coordinated. Turnover plans can also be used an effective communication tool to stakeholders to ensure there is full understanding of turnover activities, roles, and responsibilities. Proper awareness of turnover plans and activities provided early on to stakeholders can go a long way toward managing stakeholder expectations and triggering important discussions, help manage expectations and support effective resource planning.

Commonly reported system turnover challenges include stakeholders being caught unaware of activities, roles, and responsibilities they were expected to perform. Typically, turnover activities involve a multitude of activities carried out by multiple groups and stakeholders. Coordination of these activities can be a significant challenge; ensuring turnover effectiveness can be even more challenging. Ensuring proper understanding by state personnel of each process the SI has been performing for the past several months/years requires careful planning. Ensuring they are fully equipped to not only maintain and enhance the system but are also fully able to troubleshoot problems when critical system incidents occur (e.g. when the system goes down) can be even more challenging without a detailed plan.

The SI is typically responsible for producing a transition plan deliverable, however, this deliverable was not a contractual deliverable for HawaiiPay.

A project turnover phase typically has a limited budget and has limited timeframes to ensure turnover success. Organizations that fail to effectively turnover systems during this phase can be left ill-equipped to effectively maintain the system once the SI contract has closed out and | • Request the SI utilize detailed checklists for turnover to ensure an effective turnover to the state and that nothing is overlooked.
• The state immediately draft and take ownership of a turnover plan and request the SI review and offer guidance.
• Assign turnover tasks to individuals and require task signoff by task owners once they validate tasks have been effectively completed.
• Utilize readiness checkpoints and key performance indicators (KPI's) to monitor readiness effectiveness and report to project leadership. KPI's can be utilized to assure a timely and effective system turnover as well as provide project leadership an opportunity to shore up efforts when turnover efforts are not achieving expected results.
• Request the SI update relevant documents to ensure an effective turnover to the state for M&O. | 9/30/18 - As the number of activities required for end-of-year and group 3 go-live activities mount, turnover activities are more likely to be put off, deprioritized, or ignored. Post implementation roles remain unclear, though, the technical track lead is in the process of planning some post-implementation resource reallocation and roles and responsibilities, however, there are currently no plans for documenting them. Further, it is still unclear if current key project resources will be available for M&O activities, including the Functional Track Lead that has played a pivotal role during system implementation.

8/31/18 - The project seems to be realizing more and more that details of M&O activities still need to be worked out. Recently, the project was faced with a production defect that could have been avoided had someone been assigned to monitor the batch file logs and if measures had been in place to ensure batch processes are run in the proper order. The project will address this gap at the next RIOD meeting to clarify this role and define this operational process in more detail to ensure, for example, log files are checked and batch files are run in the appropriate order. IV&V will continue to recommend documenting these processes in detail as part of a turnover plan document created by the state and request the SI include them as updates to the M&O plan deliverable.

8/29/18 - The SI has indicated that key SI resources may no longer be available to the state HIP M&O team. Instead the state will have to rely on CRT Managed Services for tier 3 support once Phase 1 development is complete. IV&V is concerned that several critical problems have been averted in large part due to intervention by these 4-5 CRT individuals. CRT Managed Services struggled to resolve a recent production bug because they lacked knowledge of the HIP system details and had to rely on these individuals to troubleshoot. Lack of good turnover planning for knowledge transfer from these and other SI resources could lead to significant payroll disruptions once they are no longer actively monitoring HIP system operations.

8/14/18 - CRT is working on providing further documentation to assist turnover to state M&O team.

7/31/18 - A recent production problem (unable to access paystub from mobile device) highlighted the fact that SI lacks a consolidated detailed architecture/infrastructure maps to support troubleshooting. DAGS also noted that the SI Managed Services had difficulty resolving this ticket due to their lack of understanding of the state's infrastructure. Seems the SI Managed Services team currently relies on a few SI HawaiiPay project onsite resources to provide these details and the state CIO has expressed | Knowledge Transfer | Issue | Medium | Open |
| 25 | 7/27/2018 | 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 to validate the final payroll run data before payroll is run. | 9/26/18 - CRT has made good progress towards automating some data validation processes that have increased the overall quality of incoming data. For example, a process was created to better validate UH/DOE inbound HR data, that allows them to send targeted HR files that CRT processes and sends UH/DOE error details so they can troubleshoot/cleanup. This will likely improve conversion as well as parallel testing error rates as HR data has been the source of many parallel test failures.

8/31/18 - Seems like several recent defects identified this month could have been either prevented or identified early enough in the process through the use of validation techniques (user input validation, onscreen user interface instructions, or validation queries) to minimized negative effects as well as minimize level of effort to correct errors.

7/31/18 - Opened as a new issue. To mitigate future UPA interface errors, the project has implemented a manual validation process that must be performed every pay period. This is intended to in place until all employees are migrated off the mainframe (i.e., Group 3 deployment). | Quality Management | Issue | Medium | Open |