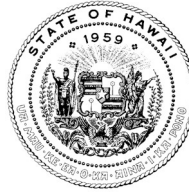**DAVID Y. IGE**
GOVERNOR

DEPT. COMM. NO. 5

DOUGLAS MURDDOCK
CHIEF INFORMATION
OFFICER

OFFICE OF ENTERPRISE TECHNOLOGY SERVICES

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September 23, 2021

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

The Honorable Scott K. Saiki,
  Speaker, and
  Members of The House of Representatives
Thirty-First 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 the report, please find attached the IV&V report the Office of Enterprise Technology Services received for the State of Hawaii Department of Labor& Industrial Relations Hawaii Unemployment Insurance (HUI) Modernization Project.

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

Sincerely,

Douglas Murdock (Sep 23, 2021 15:15 HST)

DOUGLAS MURDOCK
Chief Information Officer
State of Hawai'i

Attachment (1)

Hawaii Unemployment Insurance Modernization (HUI Mod) Project

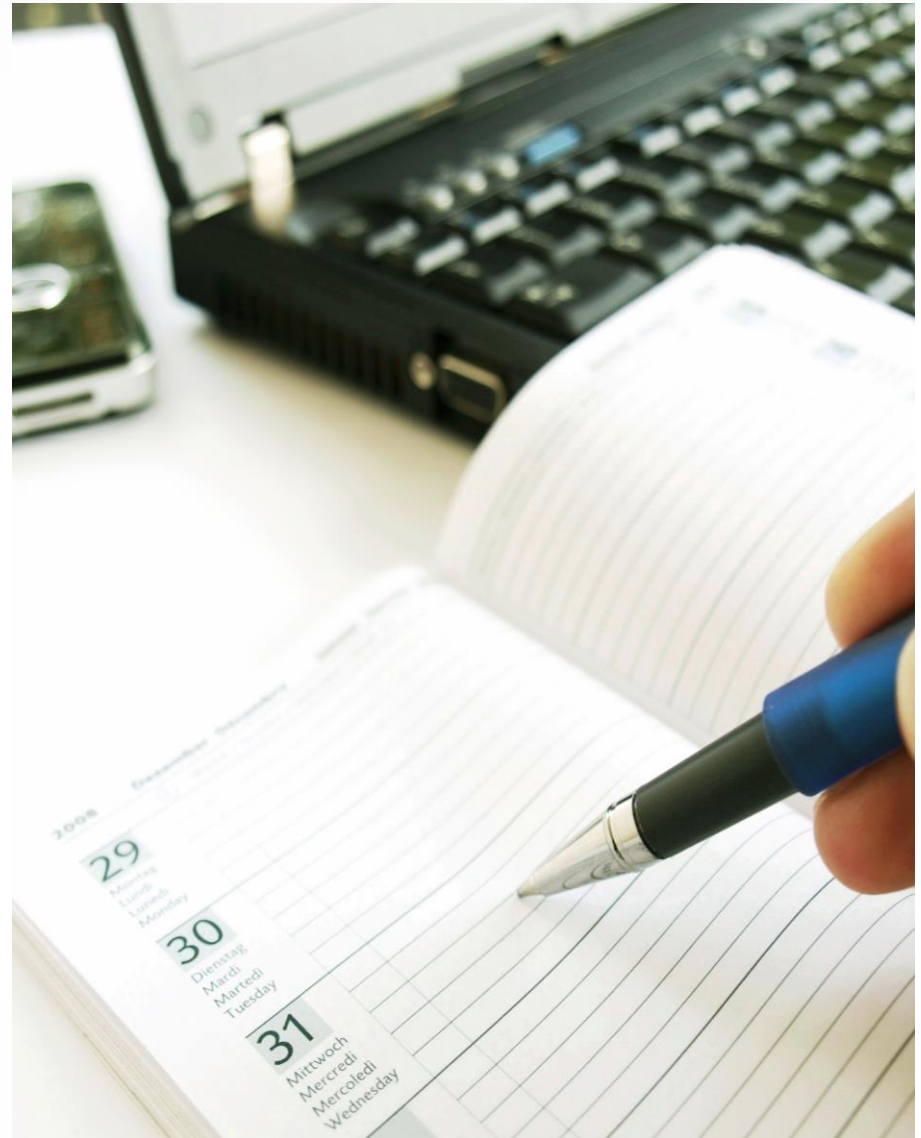## Department of Labor and Industrial Relations (DLIR)

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

For Reporting Period: **August 2021**

Draft Submitted: 9/8/2021

Final Submitted: 9/15/2021

PUBLIC CONSULTING GROUP

Solutions that Matter

Overview

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

Executive Summary

The HUI Mod Project remains on track for go-live in October 2022. This month, the Project completed Sprints 2 and 3 for the Benefits workstream but test activities remain limited and risk is increasing each month the Project waits to get feedback on development activities. The Tax and Employer Portal (EP) workstreams are behind schedule on planning activities and are working to determine a realistic schedule. Environment access and stabilization issues continue to impact Data Migration and Testing activities, and highlight the need for a complete schedule which identifies the critical path so the impacts of delays can be understood.

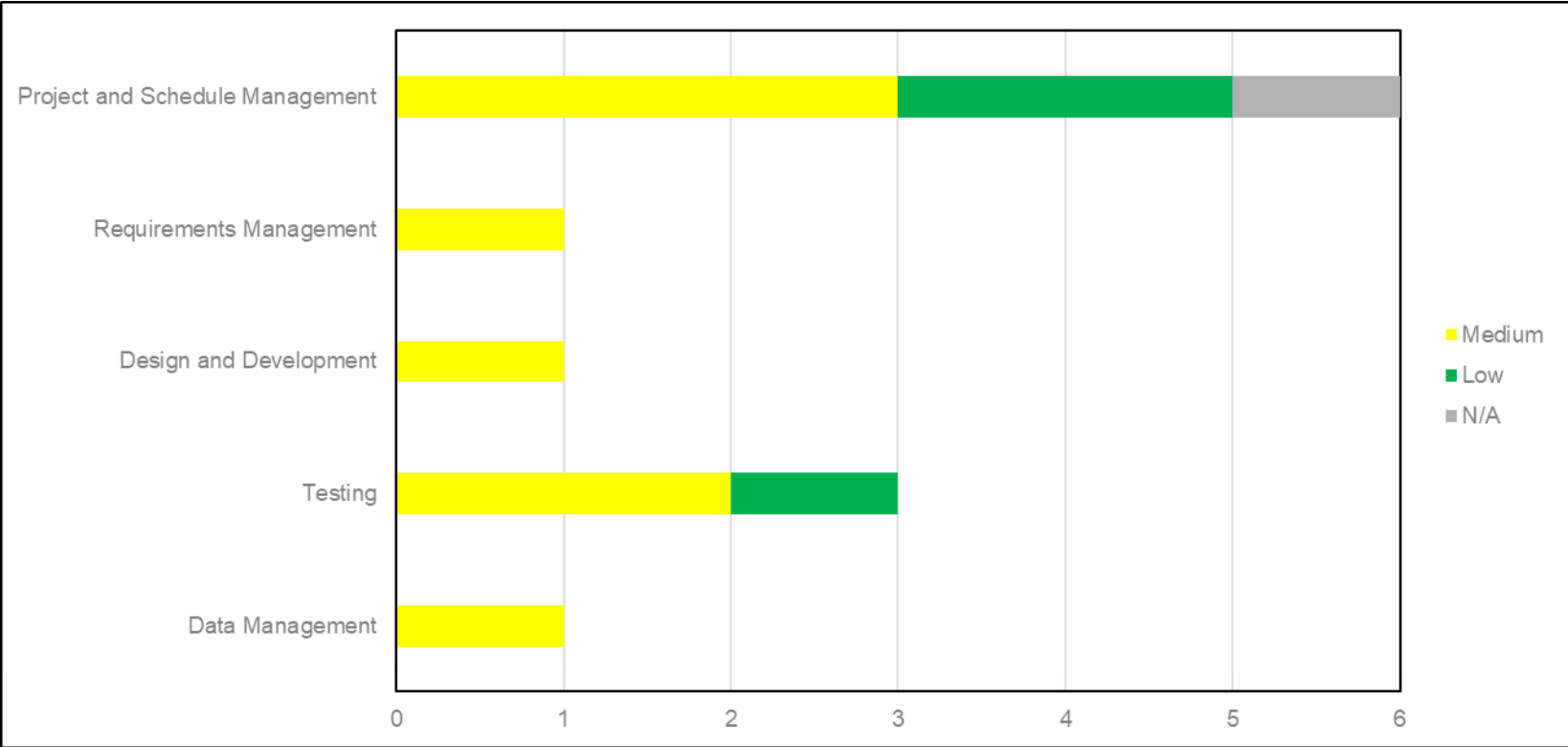| June 2021	July 2021	Aug 2021	Category	IV&V Observations
M	M	M	Project and Schedule Management	Resource Management is becoming increasingly important for the Project, as additional responsibilities and deliverables have been added to the current staff. This month the Project offboarded a key member of the PMO and is looking to backfill the role. The Project is also working to identify leads for key project areas such as Testing, Training, and Data Migration. Additional plans and details for these areas as well as the Project Management (PM) processes will be essential to ensure all stakeholders are informed and in agreement on the current project status. Schedule Management is improving but inconsistencies in status and dates remain between the multiple scheduling tools, and dates and resources remain missing from the schedule.
M	L	M	Requirements Management	The scoping activities for the Tax and EP workstreams were delayed this month and will need to be carefully managed to ensure downstream development activities are not impacted. The Project has identified an initial subset of Tax user stories that will complete by October so that Tax development can begin on time, and increased the number of weekly scoping meetings.
L	M	M	Design and Development	Benefits Sprints 2 and 3 completed this month and Sprint 4 is now underway. Reporting on sprint progress remains high-level **(#21),** and future sprints should plan to report on key details such as planned vs. completed user stories and their complexity, % of passed test scripts, and any user stories deferred to future sprints. Test activities remain delayed and therefore it is difficult to determine the build quality of each sprint. The Project should prioritize enabling testing activities to get a clear picture of how well development is progressing.

Executive Summary (cont'd)

June 2021	July 2021	Aug 2021	Category	IV&V Observations
L	M	M	Testing	Accessibility issues with the development environment continued, and prevented planned testing from occurring for Benefits Sprint 2, 3, and 4. An important benefit of using an Agile approach is rapid development and feedback via testing, and that benefit is lost if testing does not occur in the same sprint cycle. The Project should prioritize stabilizing the environment to enable this feedback loop. The Project is creating a comprehensive Test Management Plan **(#24)** to describe how testing will be conducted throughout the Project and what resources and preparation are needed.
L	M	M	Data Management	SSO onboarded a Data Conversion Technical Lead this month who is working regularly with the DLIR PM and technical teams on the Data Migration Plan. The Project expects to have a draft available by October 2021. In parallel, data conversion activities have continued, but DLIR SMEs remain unable to conduct data verification on the data converted so far due to environment access issues.
N/A	L	L	Security	During the August reporting period, both an identity provider solution and an authentication and authorization solution were agreed upon between DLIR, SSO and ETS. The teams have been meeting to determine the tasks, timelines and resources for the IDP solution. IV&V understands that the plan is for the teams to meet on a weekly basis and will continue to monitor the progress of activities.
L	L	L	Organizational Change Management	The Project continues to hold weekly working sessions with DLIR stakeholders from all affected program areas which is useful to communicate status, share upcoming processes, and gain buy-in from staff. Staff remain engaged and active participants in these sessions.
L	L	L	Knowledge Transfer	Activities have not yet started but are planned in the project schedule and will be monitored.

Executive Summary

Open IV&V Findings by Category and Priority

IV&V Findings and Recommendations

(M) Project Schedule and Management

#	Key Findings	Criticality Rating
4	**Risk – Baseline Schedule Is Missing Key Milestone Dates:** The schedule is missing dates for key milestones including UAT, Training, OCM, Deployment Preparation, Go-Live, Stabilization, and Maintenance and Operations (M&O). This makes it difficult to determine the critical path, accurately report on project progress, and identify downstream dependencies. • *08/31: Planned start and finish dates have been added for Benefits, Tax and Employer Portal testing. However, dates for UAT, Deployment Preparation, Go-Live that were previously added are now missing from the schedule on Smartsheets. Dates for Training, OCM, Stabilization, M&O have not been added.*	(M)
7	**Risk – Use of Multiple Schedule Tracking Locations May Lead to Confusion**: SSO is tracking project progress in DevOps instead of the Smartsheets tool identified in the Time Management Plan, which has made it difficult for Project leadership to understand project progress and schedule variance at any given point. • *08/31: SSO is making updates to the Project Schedule on Smartsheets but the process is inconsistent, with different statuses in DevOps versus what is shown in Smartsheets. This makes it difficult for project leadership to understand the status at any given time.*	(M)
13	*Increased Risk* **– Resource Management Needs Clarity**: Resource needs for reviews and information gathering has been disjointed, often with a lack of lead time which has resulted in individuals not being available or prepared for meetings and reviews. There is a risk that downstream activities will take longer than expected or end up blocked because resources are not available. • *08/31: There have been concerns raised about SMEs being spread thin due to limited availability of DLIR resources to assist with data conversion, sprint processes, and the lack of lead time available for them to be prepared for meetings, which has caused meetings to be canceled or pushed out. In addition, a key DLIR PMO was offboarded this month, which will add to the resource constraint. IV&V understands that the DLIR PM will be stepping in to fill this role until a new resource is hired.*	(M)

IV&V Findings and Recommendations

Ⓜ Project Schedule and Management

#	Key Findings	Criticality Rating
2	**Risk – Project Management Plan Missing Information**: The Project Management Plan contains many of the expected subplans, but would be more useful if additional details/sections were included for Scope, Schedule, Communication, Risk, and Resources. The recommended sections, which are based on IEEE standards, will provide more structure and processes to effectively carry out the project. • *08/31: The Project is in the process of addressing changes based on IV&V recommendations shared in the Deliverable Comment Form.*	🟢 L
8	**Risk – Vendor Resource Assignments are Unclear**: The project schedule has tasks that are not assigned to individual resources, which could lead to misallocation of resources and potential project delays. • *08/31: Resource assignments continue to be missing for many tasks, and the Project remains resource constrained.*	🟢 L
25	*New Preliminary Concern* **– Regression Testing Not Accounted for in the Project Schedule**: The current Project Schedule does not have time built into it for regression test related activities. Regression testing will be an important mitigation to ensure current development does not impact previous development (see Risk #26), and activities to set up, configure, and manage regression testing may add time to the schedule.	N/A

IV&V Findings and Recommendations

(M) Project Schedule and Management

Recommendations	Status
• As suggested in the previous reporting period, the Project Schedule should be completely baselined by SSO for all remaining milestones to effectively track the progress of tasks in one location, monitor impacts to the project and ensure variance reporting is accurate.	In Progress
• IV&V understands that the plan is to draft individual Project Management plans by section, and to have a single document that will include links to all the plans. The plans are heavily dependent on information from SSO, and the DLIR PM team is in the process of drafting plans and scheduling weekly meetings with the SSO PM, with the aim of completing one plan a week. IV&V will continue to monitor the progress of activities and review the plans as they are received.	In Progress
• In the previous reporting period, IV&V had recommended assigning resources to the following tasks on the project schedule: Benefits Stage 2, Tax, UAT, Training, Deployment Preparation, Go-Live, Stabilization, M&O. Resource assignments continue to be missing for these tasks. IV&V will continue to monitor the Project Schedule to ensure resources are assigned. The Project should assign individual resources to all tasks to ensure there is clarity of ownership.	In Progress
• The Project should actively monitor activities typically conducted by the offboarded resource, along with the activities of the PM who is temporarily filling in to ensure no bottlenecks start to form, and there are no impacts to future activities. IV&V understands that the DLIR Project Management team is utilizing a RACI chart to ensure effective communication and required information is shared ahead of time. IV&V will continue to monitor this risk.	In Progress
• The Project should consider adding slack to the Project Schedule to account for regression test related activities. Regression tests can help validate the quality of the application, provide a feedback cycle for newly developed features, and identify any adverse effects and mitigate them at the earliest.	Not Started

IV&V Findings and Recommendations

(M) ## Requirements Management

#	Key Findings	Criticality Rating
12	***Increased Risk* – Delay in Employer Portal and Tax activities**: The Tax and Employer Portal modules are large scope activities that have not been incorporated into the Project Schedule. The IV&V team understands that the initial plan was for activities to occur in parallel for both Benefits and Tax modules. Associated sprint activities were planned to start in July 2021 for EP but have been pushed out to August 2021, and Tax will start in October 2021. There is a risk that there is insufficient time to complete these activities prior to go-live. • *08/31: The risk has been escalated to Medium as the user story authoring activities for Tax have been pushed out from their projected start dates, which could significantly delay the Tax development activities scheduled to start in October. Scoping of user stories has been completed only for Employer Search, and is still pending requirements gathering sessions for the other Tax activities. IV&V understands that Tax DevOps meetings have been scheduled for twice a week to discuss the user stories, complete scoping activities, and meet the projected new finish dates that were added to the schedule on Smartsheets.* • *Scoping activities were also pushed out for Employer Portal. While Sprint 1 for Employer Portal started as scheduled, these scoping delays could still cause further delays in development activities.*	**M**

Recommendations	Status
• The Project should complete all scoping activities for Tax and Employer Portal to meet the revised timelines identified in the schedule. The Project should also re-evaluate the schedule in two weeks to validate the effectiveness of the Tax DevOps sessions and identify additional corrective measures if needed, to ensure there are no further delays to Tax and Employer Portal development activities.	In Progress

IV&V Findings and Recommendations

(M) Design and Development

#	Key Findings	Criticality Rating
21	**Risk – Limited clarity on user stories completed in each Sprint:** The progress of user stories completed in each sprint is not clearly discussed during PM meetings and reports, and it is uncertain which stories were completed vs deferred in a given sprint. For example, during the sprint planning sessions on 07/27, there were discussions around potentially moving two user stories from Sprint 1 to Sprint 2, but it was not clear on which stories or what their complexity was. • *08/31: Sprints 1, 2 and 3 (out of a total of 26) for Benefits have been completed, but testing at the end of each sprint has not taken place. SSO is tracking the progress of user stories in both DevOps and Smartsheets, which has made it difficult for project leadership to understand status at a given time. While SSO is reporting out user stories started and completed for each sprint, the update continues to be missing key details including user stories deferred by each sprint, as well as the complexity of those user stories.*	(M)

Recommendations	Status
• As suggested in the previous reporting period, the Project should follow a documented process to share the status and update on user stories that have been completed and deferred to future sprints, and the complexity of those user stories. As testing activities begin, it is recommended that SSO also share details on pass/fail rate, number of defects generated, and mitigation strategies with a revised due date. The Project should track the progress of user stories in one location, and a periodic snapshot with updates after every sprint can help provide better visibility to the management team. This can also help the Project monitor and track the progress of user stories, and ensure future plans are realistic. It can also help avoid a common trap where complex user stories are deferred to the final sprints and the Project is not able to maintain the same user story completion velocity which could lead to downstream delays.	In Progress

IV&V Findings and Recommendations

(M) Testing

#	Key Findings	Criticality Rating
15	**Risk – Issue with Development Environment for Benefits**: The Benefits development environment has faced availability issues preventing testing from occurring. While the issue does not block development, screen changes cannot be shown to DLIR and testing activities may be delayed. • *08/31: Environment access issues continue to delay testing activities for both the Benefits workstream and Data Conversion activities which remain untested. A planned data refresh on 08/23 was unable to complete and delayed data validation activities by the DLIR PM team and SMEs.*	(M)
24	*Increased Risk* **– Test Management Plan Needs to be Defined**: There is limited clarity on the testing approach and process, including how it is incorporated into sprint development, what types of testing will be conducted at which stages of the project (e.g., SIT, UAT, Performance, ADA compliance, Security, etc.), what tools will be used, what data will be required, and who has responsibility for test script creation and execution. Without these details, it will be difficult for the Project to appropriately prepare resources, and critical test elements may be overlooked, resulting in an unstable system. • *08/31: The Project understands the usefulness of this plan and is collaborating to complete a draft by 09/15. This risk has been increased to Medium though, as test activities should already be underway since four sprints are now complete.*	(M)
26	*New Risk* **– Lack of Regression Testing could Lead to Defects in Previously Completed Code**: The Project is not conducting regression testing which could lead to code in the current sprint breaking code developed in previous sprints without the Project's knowledge.	(L)

IV&V Findings and Recommendations

Ⓜ Testing

Recommendations	Status
• The Project should expedite the environment access and data refresh process to ensure data validation and testing can occur, and for any bugs encountered in the process to be reported and resolved in a timely manner. The IV&V team will continue to monitor this risk as further delays could affect testing and other activities in the project schedule.	In Progress
• The Project should create a comprehensive Test Management Plan which provides clarity on the process for testing across all testing phases. Testing at the end of each sprint is integral to the agile process to provide an ongoing feedback loop into the development process, and to determine the success rate for each of the sprints.	In Progress
• The Project should begin regression testing and look to automate those tests as they are refined. This will help maintain code quality and functionality without putting a resource strain on testers.	Not Started

IV&V Findings and Recommendations

Ⓜ Data Management

#	Key Findings	Criticality Rating
6	**Risk – Lack of a Data Conversion and Migration Strategy**: There is no Data Migration Plan, leading to confusion about which information and resources are needed at any given time. This could cause activities to be delayed and important information to be overlooked, especially if the right subject matter experts (both technical and business) are not engaged at the right time. • *08/31: SSO hired a Data Conversion Technical Lead, who was onboarded during the August reporting period. The DLIR PM team is actively working on the Data Migration plan, based on information shared by SSO. A Data Conversion working session was held to flesh out details for the plan, with a goal of sharing the draft by October. IV&V will continue to monitor the progress of Data Conversion related activities.*	Ⓜ

Recommendations	Status
• As a best practice, the IV&V team recommends that the Data Migration Plan includes the following information: Data Migration objectives and scope, Data Conversion methodology, Data extraction, Data Profiling, Data cleansing, Data security, and the Testing approach for Data Conversion.	In Progress
• The Project should encourage regular meeting attendance and engagement by related SMEs and stakeholders to ensure information is provided and decisions are made in a more timely manner. This should include employing meeting best practices such as providing agendas in advance, notifying participants of what information is expected of them so they can be prepared, and capturing action items and due dates.	In Progress

Appendix A – IV&V Criticality Ratings

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 evaluated and 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.

Appendix B – IV&V Standard Inputs

Meetings attended during the reporting period:	
1. M/W/F Project Management meetings	9. IV&V PMO Recommendations + EP – 08/11
2. Data Conversion Scrum meetings	10. Data conversion Plan meeting – 08/12
3. Working Group meetings	11. IV&V Report Review meeting – 08/19
4. Tax DevOps meetings	12. SSO Gap Sign-off meeting – 08/19
5. UI B2C Security meetings	13. Identity Provider Solution meeting – 08/25
6. HUI Mod Notifications meetings	14. Executive Steering Committee – 08/26
7. Sprint planning meetings	15. DLIR/SSO Site –to–Site VPN meeting – 08/31
8. Receipt entry user story walkthrough meetings	16. Claimant Portal meeting – 08/30

Appendix B – IV&V Standard Inputs

Artifacts reviewed during the reporting period:	
1. Communications Plan	
2. Risk Matrix	
3. SSO Weekly Status Reports	

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

- **Attends the project meetings**
- **Reviews the project documentation**
- **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.

Solutions that Matter