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February 1, 2022

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 (Feb 1, 2022 13:57 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)

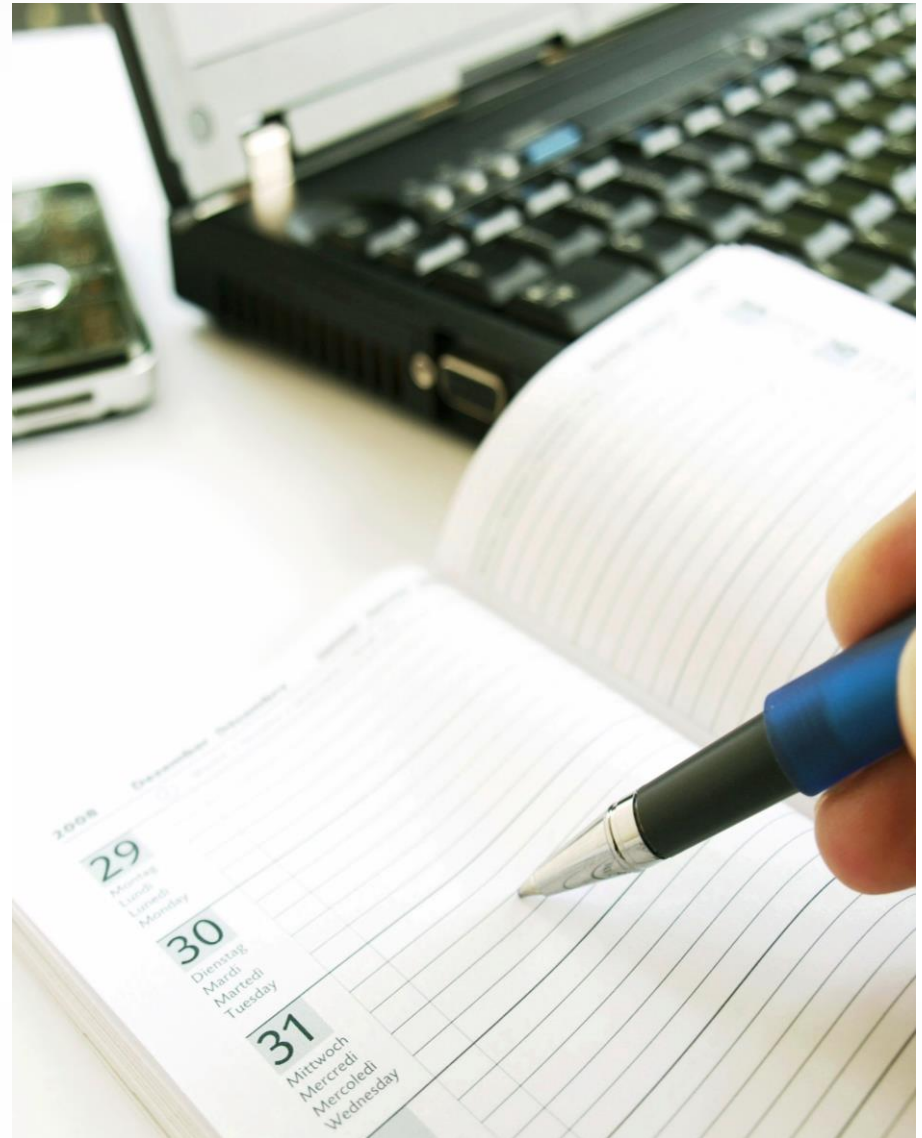
IV&V Monthly Status Report – **Final**  
For Reporting Period: **December 2021**

*Draft Submitted: 1/7/2022*

*Final Submitted: 1/27/2022*

# Overview

- Executive Summary
- IV&V Findings and Recommendations
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# Executive Summary







The HUI Mod Project is no longer on track for go-live in October 2022 and should re-baseline the schedule to account for increases in project scope related to the Employer Portal, as well as upcoming changes for Localization and Identity Proofing. The Project reviewed plans this month to resolve the High priority risks, but details on risk mitigations remain high-level, and did not result in lowering any risk priorities. Project activities remain behind schedule across scoping, development, testing, and data conversion activities for all workstreams. Testing activities remain delayed which means that code quality remains unknown. The Project has also experienced resource constraints which have delayed Tax scoping and development activities.

Oct 2021	Nov 2021	Dec 2021	Category	IV&V Observations
H	H	H	Project and Schedule Management	The Project developed a “Get Well Plan” to address the High priority risks, but there was no significant progress in mitigating these risks this month. The Plan does not demonstrate how the planned activities will resolve the risks or include measurable targets. Activities across all workstreams remain delayed due several factors including resource constraints ( <b>#27</b> ), lack of planning documents, and unexpected issues causing user stories to get deferred to future Sprints. Together, these create a risk ( <b>#28</b> ) that the current schedule is not feasible and go-live will be delayed. SSO has added developers and testers to get caught up and shifted the focus of the Tax product owner to fully focus on HUI Mod activities. <b>Risk #7</b> was re-opened this month as there continue to be schedule discrepancies between the multiple tracking tools which makes it difficult to ascertain the current progress and future timelines.
H	H	H	Requirements Management	The scoping activities for the Tax and EP workstreams have been extended one month as anticipated in <b>Risk #12</b> which has now been escalated to an issue. Tax scoping sessions remain at three per week, but progress remains behind the anticipated schedule, and may start to impact Tax development activities if not completed by the end of January. The Project identified overlapping stories between EP and Tax at a high level which reduces the risk of unknown scope, and is continuing to identify overlap at the user story level which will give a clearer picture of the overall scope and effort needed ( <b>#29</b> ).

# Executive Summary (cont'd)

Oct 2021	Nov 2021	Dec 2021	Category	IV&V Observations
H	H	H	Design and Development	Tax development resumed this month and progress metrics should be available in the coming weeks ( <b>#31</b> ). EP development missed the planned completion date of 12/23 with only 80% of development completed this period and has extended into January. Overall development progress remains unclear as weekly reporting by SSO does not provide many details. SSO continues to look at ways to improve Sprint reporting to include additional details which will be more beneficial once the associated testing can begin.
H	H	H	Testing	Testing plans, progress reporting, and metrics remain missing. There remains a backlog of tests to execute from Benefits Sprints 1 – 11 which will need to be completed in parallel to the test activities for upcoming Sprints 12 – 13 next month. The quality of the Sprints delivered to date is also still unknown since testing has not occurred by DLIR and no test details have been shared by SSO ( <b>#33</b> ). The Test Management Plan ( <b>#24</b> ) which was expected by 9/15 continues to be developed and has now been delayed to 1/20/22. The Plan is long overdue and impacting the ability to test the system or gauge progress toward go-live.
M	M	M	Data Management	Data Conversion activities continued this month but there is still no Plan guiding the process, and therefore it is difficult to determine how well the activities are progressing. The scheduled activities remain a black box which expects to complete in July 2022, and while the Project has stated in meetings that they plan to use a two-phased approach for data conversion, the details have not been shared or documented.
L	L	M	Security	Two new findings were identified this period. <b>Risk #36</b> observed that the lack of a system security plan could lead to vulnerabilities in the system. While the Project held early conversations to align on authentication and authorization procedures, there has been little focus since on documenting security controls and processes. The IV&V team is also unclear how production data is planned to be used in development and test environments, which raises the risk that restricted data will be shared or accessed inappropriately ( <b>#37</b> ).

# Executive Summary (cont'd)

Oct 2021	Nov 2021	Dec 2021	Category	IV&V Observations
			Organizational Change Management	The Project continues to hold biweekly 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.
			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


## Project Schedule and Management

#	Key Findings	Criticality Rating
27	<p><b>Risk – Vendor Resource Management Unable to Meet Scheduled Activities:</b> Vendor resource management has not been able to meet the Project's needs, with the limited availability of resources from SSO and Netacent having an impact on the project schedule. Resources are dealing with competing priorities which has caused delays in development activities for Tax and Employer Portal. For instance, during the October 2021 reporting period, a key resource for the Collections/ Overpayments module was replaced, as DLIR SMEs were concerned about the approach used for user story authoring activities, and meetings not being structured, causing significant delays in scoping activities.</p> <ul style="list-style-type: none"> <li>12/31: Tax development activities resumed as planned on 12/06. However, as noted in the previous reporting period, additional resources may need to be assigned, as there are concerns that scoping activities for Tax may not be completed in time for development scheduled after January. The Project needs to align on a plan to ensure the original scope of work, including scoping and development, can be completed to meet the revised timelines.</li> </ul>	
28	<p><b>Risk – Project May Not Meet the October 2022 Go-Live date Due to Delayed Activities and Increases in Project Scope:</b> The Original Go-Live date may not be feasible given the complex increases in project scope due to Employer Portal, Localization, and Identity Proofing. These each will require significant resources and time yet the schedule has not been re-baselined since the Project started. In addition, the Project has already faced delays across many aspects of the project including scoping, development, data conversion and testing activities for all workstreams. The STG environment continues to remain unstable, which has prevented post sprint validation activities from taking place. Currently, the Project is behind by seven (7) Sprints for Benefits Testing and five (5) Sprints for Employer Portal. As noted in risks #12 and 29, further delays in Tax and Employer Portal scoping and development activities will continue to create downstream delays, which may lead to a domino effect causing delays on future related activities and a strain on the project schedule.</p> <ul style="list-style-type: none"> <li>12/31: The "Get Well Plan" shared on 12/15 contained only high-level risk mitigations and did not address how the current schedule delays will impact go-live or be resolved. The Plan is expected to address all high priority risks, including a mitigation strategy and details. The additional scope for Localization and Identity Proofing should also be accounted for in the re-baselined schedule produced as part of the new plan.</li> </ul>	




# IV&V Findings and Recommendations

## Project Schedule and Management

#	Key Findings	Criticality Rating
28	<ul style="list-style-type: none"><li>Based on IV&amp;V projections and trending data from the Project's progress to date, the October 2022 go-live remains in jeopardy. Any future forecasting remains difficult to determine as there are questions about the accuracy of historical data as identified in <b>Risk #7</b> due to the discrepancies between DevOps vs Smartsheets. However, using the stories in the "Closed" status from DevOps as a proxy for development progress to date (similar data is not readily available in Smartsheets), the IV&amp;V team assessed the first 10 sprints of the Benefits module. A total of 48/273 stories were closed over 10 sprints for an average of 4.8 stories completed/sprint. At this rate of 4.8 stories per sprint, it will take 47 more sprints to complete the remaining 225 user stories. 16 sprints are currently planned, so that would result in 62 additional weeks of development, putting the project at ~September 2023 for Benefits development to be completed.</li><li>Similarly, IV&amp;V projected the time it will take to complete Data Conversion activities based on data available for the first 8 sprints. It was observed that 86/223 (36%) tables were converted across 8 sprints with an average of 10.75 tables/sprint. At the current velocity, it will take 13 more sprints to convert the remaining 137 tables. This would require the Project to add 5 more sprints or 10 more weeks. It is important to note that this additional time is only for "Pass 1". Errors generated and records skipped will need to be accounted for in a separate "Pass 2". IV&amp;V understands that Pass 2 will take place simultaneously, and details on the approach and timeline are expected to be shared in the Data Migration Plan, to be reviewed on 01/07. If Pass 2 activities begin in February 2022 as stated by the Project, that will put conversion at 86/466 tables (18%), requiring the Project to add 54 more weeks to the schedule. SSO expects that they can complete Pass 2 activities also by July as those activities are not as rigorous as the Pass 1 activities, but no details have been provided to validate what those activities are or to support the estimated schedule.</li></ul>	



# IV&V Findings and Recommendations

## Project Schedule and Management

#	Key Findings	Criticality Rating
7	<p><b>Increased Risk – Use of Multiple Schedule Tracking Locations May Lead to Confusion:</b> 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.</p> <ul style="list-style-type: none"><li>• 12/31: Both DLIR and SSO PMs continue to make updates to the schedule on Smartsheets. However, there continues to be a disconnect between the updates on Smartsheets vs DevOps. These inconsistencies were observed across different sprints and reporting types. In addition to discrepancies in the total count of user stories for Benefits, Tax and Employer Portal, there is also a disconnect between the number of user stories and user story IDs planned, signed off and deferred in every sprint in DevOps vs Smartsheets.</li><li>• It is important to note that the total counts are not only different between the two sources, but also keep changing. For instance, the total count for Benefits user stories is now 294 on Smartsheets (from 273 in November) and 259 on DevOps (from 249), and the total count for Tax is 97 on Smartsheets (from 113), 114 on DevOps (from 90). EP related updates are being tracked in an internal DevOps site which is not visible to the Project team. SSO is expected to share relevant updates for EP on 01/14.</li><li>• To better understand and verify the source of truth for tracking metrics, IV&amp;V shared projections to discuss schedule forecasting based on the data available in the two sources, as noted in <b>Risk #28</b>. The SSO team understands that a disconnect exists and is working to reconcile the information between DevOps and Smartsheets. As noted in previous reporting periods, it is imperative for the Project to identify and address the inconsistencies between the updates on Smartsheets and DevOps, as different statuses across the different sources make it difficult for the Project to understand the status at any given time.</li></ul>	

# IV&V Findings and Recommendations

## Project Schedule and Management

#	Key Findings	Criticality Rating
13	<p><b>Risk – DLIR Resource Management Needs Clarity:</b> 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.</p> <ul style="list-style-type: none"><li>12/31: Testing and post sprint validation activities are behind schedule for the Benefits module. As noted in the previous reporting period, IV&amp;V continues to monitor this risk as SMEs will become more actively involved as testing activities progress. DLIR SMEs are expected to be on PTO in January 2022, and the Project should plan to ensure that the PTOs are accounted for and activities are planned ahead of time to prevent delays in downstream activities.</li></ul>	
25	<p><b>Risk – Regression Testing Not Accounted for in the Project Schedule:</b> 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.</p> <ul style="list-style-type: none"><li>12/31: IV&amp;V understands that the plan is for the Project to conduct regression testing manually, and details will be included by the SSO team in the Test Management Plan, expected to be shared on 01/06. As noted in the September reporting period, regression testing has not yet been accounted for in the Project Schedule on Smartsheets.</li></ul>	


# IV&V Findings and Recommendations

## Project Schedule and Management

Recommendations	Status
<ul style="list-style-type: none"><li>Losing key resources during the critical stages of the project can be detrimental to the completion and success of project activities. IV&amp;V understands that additional developers from SSO were onboarded to assist with Tax and development activities. Two additional testers are expected to be hired in January 2022. The Project should also ensure it is effectively conducting Knowledge Transfer sessions with new resources who will be stepping in.</li></ul>	In Progress
<ul style="list-style-type: none"><li>As noted in <b>Risk #28</b>, based on the forecasting, the Project does not look to be on track to meet the October 2022 Go-Live date. SSO should share a mitigation plan, including the approach and methodology to meet the originally identified dates, as the Project is now expected to consume some of the contingency in the future, causing a strain on the schedule. The IV&amp;V team recommends exploring alternative options to re-baseline the Go-Live date which takes into account the expanded scope, and appropriately adjusts the schedule and budget based on DLIR's priorities. It has been observed that a significant increase in seasonal claims are usually observed during the November – March time period and going live during this window should be avoided if possible.</li></ul>	In Progress
<ul style="list-style-type: none"><li>The Project should ensure the schedule in Smartsheets accounts for all user stories that require development and is consistent to the data that is shown in DevOps, including the state of each activity and whether it is complete or not.</li></ul>	In Progress
<ul style="list-style-type: none"><li>The same resources are involved in the Tax and EP Scoping sessions. Resources should be informed ahead of time, to ensure they are available and are prepared for all meetings. The availability of DLIR SMEs need to be accounted and planned for in the schedule as they are expected to become more actively involved as testing activities progress.</li></ul>	In Progress
<ul style="list-style-type: none"><li>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.</li></ul>	Not Started



# IV&V Findings and Recommendations

## Requirements Management

#	Key Findings	Criticality Rating
12	<p><b>Escalated to Issue – Delay in Employer Portal and Tax Scoping Activities May Impact Development Schedule:</b> The Tax and Employer Portal modules are large scope activities that have not been incorporated into the Project Schedule. The IV&amp;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.</p> <ul style="list-style-type: none"><li>• <i>12/31: The projected finish dates for Tax scoping activities have been pushed out to early 2022. There are concerns that scoping activities for Tax may not be completed in time for development activities scheduled after January. The project needs to align on a plan to ensure all scoping activities can be completed in time for development scheduled after January.</i></li><li>• <i>The status for the completion of EP scoping activities is unclear. EP scoping and development activities are being tracked on an internal DevOps site, not visible to the Project team, and it is integral for SSO to share relevant updates during the PM meetings to understand the progress and identify roadblocks. All EP development was not completed by 12/23 as originally planned. SSO reported that ~80% of development was complete and has identified bugs and additional technical work that will require two additional sprints. A revised date of 01/20 has been identified to complete EP development. IV&amp;V understands that there are EP development activities that are dependent on Tax which need to be identified and accounted for in the schedule on Smartsheets. SMEs are concerned that all requirements are not being gathered as expected, which could create delays during development.</i></li></ul>	

# IV&V Findings and Recommendations

## Requirements Management

#	Key Findings	Criticality Rating
30	<p><b>Increased Risk – Lack of Requirements Traceability Matrix May Lead to Missed Activities:</b> The Project should create and update a cohesive Requirements Traceability Matrix (RTM) that provides clarity on how user stories progress from scoping into sprint development and eventually into testing. The RTM can help effectively identify any missing requirements and additional effort that needs to be accounted for in the schedule.</p> <ul style="list-style-type: none"><li>• 12/31: As the Project is steadily moving into Development and Testing, it is integral to create an RTM. DLIR is expected to share an updated version by 01/31.</li></ul>	
29	<p><b>Lowered Risk – Additional Scope for Technical Debt and Configuration User Stories May Impact Schedule:</b> The Project has not accounted for additional scoping activities identified as part of the Benefits, Tax, and Employer Portal modules. As part of Benefits, for instance, there are user stories related to technical debt and configuration that have not been included in the schedule on Smartsheets but will require development activities. This additional effort will be needed for the Project to effectively assign resources and to ensure future plans for completion are accurate. Additionally, there may be an overlap between user stories in Tax and Employer Portal that needs to be resolved to determine the true level of effort needed for each workstream. There is a concern that if these user stories are not double-counted, there would be additional user stories that need to be scoped, which would require the Project to plan for resources. This additional scope across the three modules should be planned and accounted for in the schedule to prevent potential delays in downstream activities.</p> <ul style="list-style-type: none"><li>• 12/31: The overlap between Tax and Employer Portal user stories has been identified at the feature level on Smartsheets. As noted in the previous reporting period, there are Employer Portal development activities that are dependent on Tax which need to be identified and planned for in the schedule on Smartsheets. The IV&amp;V Team recognizes the progress made on understanding some of the potential scope and has lowered this priority to Medium, but recommends that the Project quickly look to close out this risk.</li></ul>	


# IV&V Findings and Recommendations

## Requirements Management

Recommendations	Status
<ul style="list-style-type: none"><li>The schedule on Smartsheets should be updated to reflect the delays and revised timelines for scoping based on discussions during the Tax DevOps sessions. The Project should complete all scoping activities for Tax and Employer Portal to meet the revised timelines identified in the schedule. The Project should have dependencies built in the schedule, where development sprints are tied to the scoping of user stories.</li></ul>	In Progress
<ul style="list-style-type: none"><li>It is recommended that Netacent share an agenda prior to the Tax DevOps sessions and execute to it, to ensure there is sufficient lead time for DLIR SMEs to be prepared for meetings. The Project should also follow a documented process to share updates on progress, action items and roadblocks, that can be revisited during the meetings as required. To ensure the Project can catch-up on scoping activities, the Tax lead from SSO can go onsite to conduct sessions in-person with SMEs. It is also recommended that the Project 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 prevent further delays to Tax and Employer Portal development activities.</li></ul>	In Progress
<ul style="list-style-type: none"><li>The Requirements Traceability Matrix (RTM) should be created and consistently updated during the course of the Project and reflect changes based on scoping, development and testing activities.</li></ul>	In Progress
<ul style="list-style-type: none"><li>The additional scope for technical debt and configuration activities should be planned and accounted for at the user story level in the schedule on Smartsheets, to prevent potential delays in downstream activities.</li></ul>	In Progress

# IV&V Findings and Recommendations

## Design and Development

#	Key Findings	Criticality Rating
31	<p><b>Risk – Delay in Tax Development Activities May Impact Schedule:</b> Tax development activities have not progressed as planned due to the limited availability of vendor developers as they continue to deal with competing priorities. According to the revised timelines identified in the previous reporting period, only Sprint 0 for Tax has been completed. Subsequent sprints are behind schedule and will not meet the planned dates. The Project should align on a plan to ensure resources are available for activities to take place in a timely manner. As noted in the previous reporting period and in <b>Risk #29</b>, the Project should also determine if there is an overlap between user stories in Tax and Employer Portal, as this could lead to additional scoping and development activities that need to be accounted and planned for in the schedule.</p> <ul style="list-style-type: none"><li>12/31: Tax development activities resumed on 12/06 and is currently in Sprint 1. As noted in <b>Risk #12</b>, there are concerns that scoping activities for Tax may not be completed in time for development activities scheduled after January. IV&amp;V understands that the Project is in the process of updating the “Get Well Plan”, to be shared on 01/07. The plan is expected to include a mitigation strategy and details on resource allocation, as well as the revised timelines for Tax scoping and development related activities. There are EP development activities that are dependent on the completion of Tax development that need to be accounted for in the schedule. Additional resources may need to be assigned to ensure the revised timelines for Tax scoping and development can be met, as further delays can have downstream impacts on both Tax and EP.</li></ul>	



# IV&V Findings and Recommendations

## H Design and Development

#	Key Findings	Criticality Rating
21	<p><b>Risk – Limited clarity on user stories completed in each Sprint:</b> 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.</p> <ul style="list-style-type: none"><li>12/31: Sprints 1-12 (out of a total of 26) for Benefits, and sprints 1-10 (out of a total of 12) for Employer Portal have been reported as completed. As noted in <b>Risk #7</b>, there continues to be a disconnect between the number of user stories and user story IDs planned, signed off and deferred in every sprint in Smartsheets vs DevOps. The Project should update the list of user stories signed off by sprint on Smartsheets, and ensure the information is reflected on DevOps as well. These inconsistencies between the sources need to be addressed at the earliest to ensure the team can accurately track the status at any given time. The Project should also ensure there is a plan in place for completion of all user stories in subsequent sprints, that are dependent on the completion of the ones that have been deferred, as that could cause further delays in the project schedule. The SSO team reported that ~80% of all EP development work has been completed. However, details for EP are tracked in an internal DevOps site that cannot be accessed by the DLIR team, and SSO should plan to share relevant updates during the PM meetings.</li></ul>	<span style="background-color: yellow; border-radius: 50%; padding: 2px 6px;">M</span>



# IV&V Findings and Recommendations

## Design and Development

Recommendations	Status
<ul style="list-style-type: none"><li>The Project should build dependencies into the schedule, where development sprints are tied to the scoping of user stories. The Project should also align on a plan to ensure resources from SSO are available for Tax development activities to take place to prevent further delays to the schedule. This may include adding new resources to the team or reallocating senior resources from other efforts who can help the Project catch up to the planned schedule and velocity of user story development.</li></ul>	In Progress
<ul style="list-style-type: none"><li>The Project should follow a documented process to share the status and updates on user stories that have been completed and deferred to future sprints, and the complexity of those user stories. As testing activities take place, 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. There is also a need for the Project to account for all user stories that require development, in the schedule on Smartsheets.</li></ul>	In Progress




# IV&V Findings and Recommendations

## Testing

#	Key Findings	Criticality Rating
24	<p><b>Issue – Lack of a Test Management Plan May Lead to Missed Activities and Miscommunication:</b> 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.</p> <ul style="list-style-type: none"><li>12/31: The Project understands the effectiveness of a TMP and has assigned a test lead and two additional resources to assist with the plan. IV&amp;V reviewed the draft version of the Test Management Plan and found it to still missing key information on Tax and Benefits workstreams, as well as details on test phases, including the associated timelines, test data and scenarios, and roles and responsibilities for post sprint validation activities. The Plan does not include information on non-functional testing, and is missing details on the approach and strategy for performance testing, security testing, failover testing, etc. The finalized version of the plan was not shared as expected on 12/31 and a revised date of 01/06 has been identified for review.</li></ul>	
32	<p><b>Closed Risk – Benefits Testing Schedule May not be Met:</b> DLIR Basic Functionality Testing for Benefits was initially scheduled to start on 09/22, and while a revised target date of 11/05 has now been identified for Testing to start, there are additional concerns with the data in the STG environment not being ready, which has prevented testing from taking place. The Project is currently behind by seven (7) Sprints for Benefits Testing and five (5) Sprints for Employer Portal. The Project should align on a plan for DLIR SMEs to catch up on testing activities. Any further delays in testing will continue to create downstream delays, that will eventually contribute to the Go-Live date getting pushed out.</p> <ul style="list-style-type: none"><li>12/31: This risk is being closed and will be tracked in <b>Risk #33</b>.</li></ul>	

# IV&V Findings and Recommendations

## Testing

#	Key Findings	Criticality Rating
33	<p><b>Risk – Limited Clarity on the Quality of Code May Lead to a High Volume of Defects and Rework:</b> Sprints 1-7 (out of a total of 26) for Benefits, and Sprints 1-5 (out of a total of 8) for Employer Portal have been completed, but testing at the end of each sprint has not taken place. There is therefore limited clarity on the quality of code as post sprint validation by DLIR SMEs has not taken place for any of the 12 Sprints across Benefits and Employer Portal. Testing at the end of each sprint is integral to the agile process to provide an ongoing feedback loop into development, and to determine the success rate for each of the sprints.</p> <ul style="list-style-type: none"> <li>12/31: Post sprint validation activities resumed in November. However, the activities are currently behind schedule, and not on track to meet the projected finish dates identified on Smartsheets. IV&amp;V understands that the root causes for the impediments are being tracked at a high level. However, the Project should also align on a plan to ensure the defects are prioritized based on criticality, and to ensure there is a mitigation plan to retest the blocked user stories. Revised timelines for completion of post sprint validation activities need to be identified, and the Project should execute to it to prevent downstream delays.</li> </ul>	
15	<p><b>Closed Risk – Development Environment Lacks Stability for Benefits:</b> 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.</p> <ul style="list-style-type: none"> <li>12/31: IV&amp;V understands that the Benefits SMEs have access to the STG environment, and plan to test 22 user stories, that are currently in business review. IV&amp;V will continue to monitor the stability of the environment.</li> </ul>	
26	<p><b>Risk – Lack of Regression Testing could Lead to Defects in Previously Completed Code:</b> 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.</p> <ul style="list-style-type: none"> <li>12/31: The Project understands the effectiveness of Regression Testing, and the benefits of automating the process. SSO and Netacent have aligned on a strategy to conduct regression testing but have not finalized the process or shared the approach with the wider Project. The IV&amp;V team understands that details, including the approach, will be included in the Test Management Plan which is now expected to be shared on 01/07.</li> </ul>	



# IV&V Findings and Recommendations

## Testing

Recommendations	Status
<ul style="list-style-type: none"><li>The Project should create a comprehensive Test Management Plan which provides clarity on the process for testing across all testing phases.</li></ul>	In Progress
<ul style="list-style-type: none"><li>The Project should identify a revised timeline for all post sprint validation activities and ensure testing activities can take place as planned. The development team should also align on a plan to address the blocked stories as they may have dependencies downstream, causing further delays.</li></ul>	In Progress
<ul style="list-style-type: none"><li>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. As post sprint validation activities get pushed out further, there is a risk that the revised dates identified for the completion of Benefits Testing will not be met, as the Project is currently behind by 7 Sprints for Benefits, which could cause further delays in testing and other activities in the project schedule.</li></ul>	In Progress
<ul style="list-style-type: none"><li>The Project should resolve any configurations, permissions and/ data related issues in the STG environment for Testing to take place. Testing activities should begin immediately so that post sprint validation by DLIR SMEs can occur, and for code validation to take place.</li></ul>	Closed
<ul style="list-style-type: none"><li>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.</li></ul>	Not Started

# IV&V Findings and Recommendations

## Data Management

#	Key Findings	Criticality Rating
6	<p><b>Risk – Lack of a Data Conversion and Migration Strategy:</b> 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.</p> <ul style="list-style-type: none"> <li>12/31: IV&amp;V reviewed the Draft version of the Data Conversion Plan and provided recommendations on details as well as additional sections that can be included in the plan. The final version of the plan was not shared as originally planned on 12/31 and a revised date of 01/07 has been identified for review.</li> </ul>	
35	<p><b>Risk – Limited Clarity on Data Conversion Runs May Lead to Misunderstanding and Rework:</b> Data Conversion activities are currently in progress. However, there is limited clarity on the details for data that has been converted, including information on table counts, accuracy of conversion such as control totals and ensuring data reconciliation between the mainframe system and the new database, and any duplicated or skipped record counts. These details should be provided to understand the quality of conversion, and for errors to be minimized during the migration process.</p> <ul style="list-style-type: none"> <li>12/31: There is limited information shared on the data that has been converted, including the accuracy and quality of conversion. SSO recently shared that two passes will be conducted for Data Conversion. The first pass will be completed by mid-July, and the second pass is expected to begin in February and run in parallel to the first pass by taking a second look on tables already converted. The revised Data Migration Plan is expected to contain more details around the strategy and approach. The IV&amp;V team shared projections based on the number of tables completed and current velocity which indicate the schedule may extend much longer than currently scheduled. However, there is limited clarity on the total number of needed sprints since “completed” essentially means that only a first pass was completed. There is currently no process in place to identify and minimize errors, and the Project would need to plan the total number of sprints based on the total number of passes required to ensure completion, which is dependent on the error resolution process.</li> </ul>	


# IV&V Findings and Recommendations

## Data Management

Recommendations	Status
<ul style="list-style-type: none"><li>Any errors identified during the Data Conversion process should be captured in a log and the Project should ensure there is a process in place to minimize them. In addition to screen-to-screen validation, there should be other means of testing identified and planned for to ensure the Data Migration process is successful. As Conversion activities take place, the Project should share an update to show the burndown against the total progress. This can help the Project track the progress across Sprints, and ensure future plans are realistic.</li></ul>	In Progress
<ul style="list-style-type: none"><li>As a best practice, the IV&amp;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.</li></ul>	In Progress
<ul style="list-style-type: none"><li>It is recommended that as validation activities progress, SSO also share details on tables converted, including table counts, control totals, conversion accuracy and skipped record counts. Data accuracy is critical to maintain high quality which includes ensuring data consistency, lack of duplicate/incorrect data records in the new database and data currency. The Project should also track the progress of data conversion in one location, and a periodic snapshot with updates can help provide better visibility to the project management team to ensure future plans are realistic.</li></ul>	In Progress

# IV&V Findings and Recommendations

## Security

#	Key Findings	Criticality Rating
36	<b>New Risk – Lack of a System Security Plan Can Increase the Risk of Security Incidents and Prevent Access to Key Interface Partners:</b> There is limited clarity on the system security controls in place for the Agency and the HUI Mod system. This could lead to security incidents and data breaches, and interface partners such as the IRS and SSA may deny the system access for key information needed to accurately and effectively perform business operations.	
37	<b>New Risk – Lack of Clarity on Production Data Usage in Non-Prod Environments Could Lead to Data Breaches:</b> The Project plans to use legacy production data in certain environments, such as testing and staging, but has not clarified how this data will be used or why it is needed. There is a risk that the data will be viewed or used by unauthorized individuals and could result in restricted data being used inappropriately.	






# IV&V Findings and Recommendations

## Security

Recommendations	Status
<ul style="list-style-type: none"><li>The Project should share a System Security Plan that includes details on how controls can be implemented to prevent end users from completing system 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 policies related to adequate segregation of duties. In addition, there should be a mechanism or process to detect and identify user provisioning requests that include conflicting roles and/or behaviors not in line with the expected activity for a given role. The Project should also establish early memorandums of agreement (MOA's) with external department participants that obligates them to follow security standards established by the project.</li></ul>	Not Started
<ul style="list-style-type: none"><li>The Project should clearly identify in both the System Security Plan and Testing Plan how production data will be used in non-production environments, what controls are in place to mask the data if needed, and who will have access to the data. It is typically a best practice to only include production data in production-like environments that have been security hardened to the same level as the production environment, and to limit data access to the most restrictive level needed to still allow business functions to occur.</li></ul>	Not Started

# Appendix A – IV&V Criticality Ratings

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 evaluated and 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

Meetings attended during the reporting period:	
1. M/W/F Project Management meetings	6. Sprint Review meetings
2. Data Conversion Scrum meetings	7. Executive Steering Committee – 12/13
3. Working Group meetings	8. EP Development Review – 12/14
4. Tax DevOps meetings	9. HUI MOD Project Wellness Recheck – 12/15
5. HUI Mod Notifications meetings	

# Appendix B – IV&V Standard Inputs

Artifacts reviewed during the reporting period:	
1. SSO Weekly Status Reports	
2. Draft Test Management Plan	
3. Draft Data Migration Plan	

**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**