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April 11, 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 (Apr 11, 2022 14:23 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)

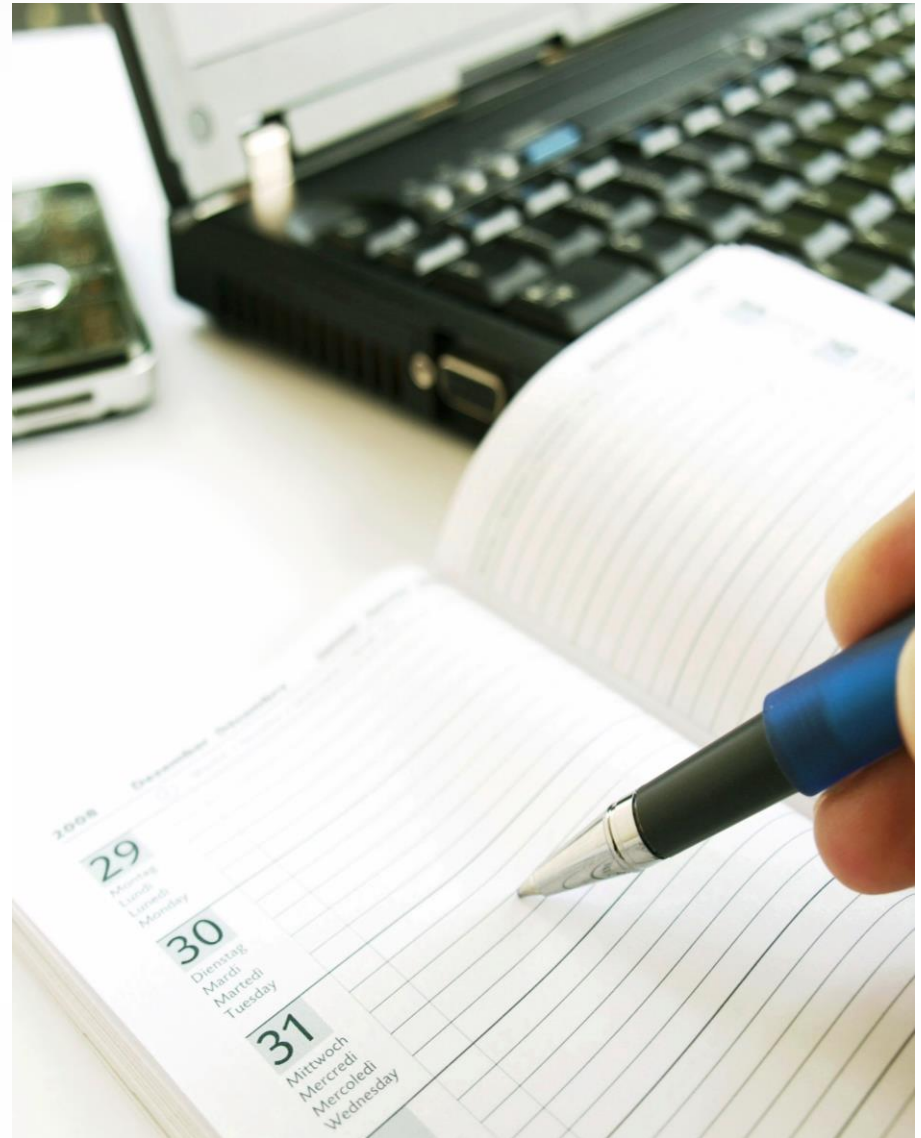
IV&V Monthly Status Report – Final
For Reporting Period: **February 2022**

Draft Submitted: 3/7/2022

Final Submitted: 4/7/2022

Overview

- Executive Summary
- IV&V Findings and Recommendations
- Appendices
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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. This month, the Project continued making progress for scoping, development, and testing activities across the Benefits, Tax, and Employer Portal workstreams. However, all activities remain behind schedule and an updated schedule is not expected until April 2022. The system vendor is planning to use the upcoming period to enhance project documentation and conduct a deep-dive analysis to determine the true status of the Project and an updated timeline of activities. The former SSO Project Manager, Rigo Delgadillo, left the team in February and was replaced with Damion Strommer. SSO also announced the addition of Tobi Cates as the SSO Project Management Director. Damion and Tobi will drive the analysis and updated timeline activities. Testing activities remain delayed which means that code quality remains unknown.

Dec 2021	Jan 2022	Feb 2022	Category	IV&V Observations
H	H	H	Project and Schedule Management	Activities across all workstreams remain delayed due to several factors including resource constraints (#27), lack of planning documents, and unexpected issues causing user stories to get deferred to future Sprints. Together, these create a risk (#28) that the current schedule is not feasible and go-live will be delayed, which has been confirmed by the lack of an accurate schedule and discrepancies between the multiple schedule tracking tools (#7). The development vendor, Solid State Operations (SSO), has been working on a Project Action Plan for the last several months to mitigate these risks, and expects to have an updated timeline by April 2022. That will put the Project at six (6) months away from go-live and is likely too late to implement preventative measures to maintain the October 2022 implementation date. The mitigation strategies to date have not been effective and the Project continues to fall further behind schedule.

Executive Summary (cont'd)

Dec 2021	Jan 2022	Feb 2022	Category	IV&V Observations
H	H	H	Requirements Management	The scoping and development activities for the Tax and EP workstreams remain behind schedule, as documented in Risk #12 . Tax scoping sessions progress remains behind the anticipated schedule, and this appears to be affecting Tax development activities planned for February, as they are indicated as "not started" in Smartsheets. The EP development was not completed as planned during February. The IV&V team previously identified a risk (Risk #30) that a lack of a Requirements Traceability Matrix (RTM) may lead to missed activities, and as anticipated, all the "fit" requirements were not documented during the scoping sessions. SSO did not deliver the RTM during February, and a new delivery date has not been provided. To mitigate Risk #38 where non-gap requirements are not being tested, a user story scoping and acceptance criteria workshop has been scheduled for 03/02/22. The plan is for analysts from SSO and the SMEs from DLIR will identify and agree on a single process for user story authoring, across Benefits, Tax and Employer Portal workstreams.
H	H	H	Design and Development	Development activities continued this month for all workstreams, although it is unclear what progress was made or what challenges have been encountered during the process as aggregated data has not been shared or reliably tracked by the Project. EP development again missed the planned completion by the end of February 2022. SSO continues to look at ways to improve Sprint reporting (Risk #21) to include additional details which will be more beneficial once the associated testing can begin, however weekly reporting that was planned to begin on 02/04/22 did not occur and a new date has not been identified.

Executive Summary (cont'd)

Dec 2021	Jan 2022	Feb 2022	Category	IV&V Observations
H	H	H	Testing	This month, the Project shared an updated Test Management Plan (#24) to include information on defect management and manual gap testing for the Benefits workstream, but gaps remain regarding tax workstream, test data and scenarios, associated timelines, entry and exit criteria for each phase, and roles and responsibilities for all testing activities. The quality of the Sprints delivered to date remains unknown since testing has not occurred by DLIR and no test details have been shared for any of the workstreams (#33). There was no progress on Risk #39 regarding a lack of early end-to-end testing, which may disrupt UAT during February 2022. A series of needs assessment meetings to identify a complete list of interface partners began in mid-February, to address the need for testing with interface, which could cause delays (#40).
M	M	M	Data Management	Data Conversion activities continued this month but there is still not a final 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.
M	M	M	Security	There are no updates for this period. Risk #36 remains open concerning the lack of a system security plan which could lead to vulnerabilities in the system. 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 (#37).

Executive Summary (cont'd)

Dec 2021	Jan 2022	Feb 2022	Category	IV&V Observations
L	L	L	Organizational Change Management	The Project continues to hold bi-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. A new risk (#41) was added in February to document the lack of a well defined OCM strategy. This can create negative impacts, such as schedule slippage, and can reduce end user buy-in and adoption.
L	L	L	Knowledge Transfer	Activities have not yet started but are planned in the project schedule and will be monitored.


Executive Summary (cont'd)

Open IV&V Findings by Category and Priority




IV&V Findings and Recommendations

Project Schedule and Management

#	Key Findings	Criticality Rating
27	<p>Risk – Vendor Resource Management Unable to Meet Scheduled Activities: 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">02/28: SSO identified a new Project Manager who started in 02/22. As noted in previous reporting periods, SSO has requested until 04/01/22 to determine velocity and revised project timelines, based on sprint iterations. The project has been adding new resources and is in the process of identifying new dates for completion, as the team is not on track to meet the originally identified dates. For instance, according to the schedule on Smartsheets, UAT and Training activities were initially expected to begin on 02/18/22, to support the Project to Go-Live in October. However, the Project could not meet the date as it is behind on scoping, developing, and testing activities. To prevent further delays in project activities, resources should be identified and assigned in a timely manner, to ensure they are prepared and available when required.	


IV&V Findings and Recommendations

Project Schedule and Management

#	Key Findings	Criticality Rating
28	<p>Risk – Project May Not Meet the October 2022 Go-Live date Due to Delayed Activities and Increases in Project Scope: 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">02/28: SSO understands that additional scope will have an impact on the project schedule and has requested additional time, until 04/01/22, to analyze and determine project velocity. As noted in the previous reporting period, decisions still need to be made on Identity Proofing, Translation, UAT, and OCM activities that are not currently accounted for in the schedule. Timely decisions need to be made, to prevent further delays in the planning and execution of the identified activities.	



IV&V Findings and Recommendations

Project Schedule and Management

#	Key Findings	Criticality Rating
7	<p>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.</p> <ul style="list-style-type: none">02/28: The risk remains high as project progress is not being tracked as expected on Smartsheets, with many activities across the different modules having dates in the past that have not been met, new dates for completion have not been identified, and progress has also not been updated. For instance, there are two activities as part of Benefits scoping still pending completion – ‘Accounting’ and ‘Adjudication’ with finish dates of 01/31/22, 02/18/22, and three activities as part of Tax – ‘Reserve Balance’, ‘Collections’, and ‘LMI’ with finish dates of 02/11/22, 02/18/22, and 02/18/22 respectively. As noted in Risk #12, the progress of scoping activities for Employer Portal in general is also unclear as all EP related activities are being tracked on an internal DevOps site, not visible to the Project team. In addition, SSO had agreed to share reports on a weekly basis to include schedule related information requested by DLIR. However, the reports were not shared on 02/04/22, as identified in the Project Action Plan. The schedule should be updated on a regular basis, for the Project to understand the status at any given time, and to identify any roadblocks for completion. DLIR has a master schedule to track project updates on their end. Based on project progress and discussions with SSO’s PM, if there is a need, the schedule will be rebaselined during the first two weeks of April.	

IV&V Findings and Recommendations

Project Schedule and Management

#	Key Findings	Criticality Rating
13	<p>Risk – DLIR 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.</p> <ul style="list-style-type: none">02/28: DLIR Subject Matter Experts (SMEs) are expected to become more involved as testing and data conversion activities progress. As noted in the previous reporting period, if SMEs are not informed ahead of time, they may not be prepared or available when required, leading to delays in downstream activities. The risk was realized in February as SMEs were not present during the Benefits Sprint Planning sessions. The primary Benefits SME has been out for a few months, and DLIR had identified two new resources to attend meetings in her place. However, they were not informed ahead of time, and did not have the correct meeting invites, which prevented them from participating in the Sprint planning sessions. The sessions took place as planned, without attendance from any DLIR SMEs, which could potentially create rework and delays in future activities. All resource assignments should take place in a timely manner to ensure resources are prepared and available when required.	
25	<p>Risk – 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.</p> <ul style="list-style-type: none">02/28: The plan is for the Project to conduct regression testing manually. As noted since the September reporting period, regression testing has not yet been accounted for in the Project Schedule on Smartsheets.	


IV&V Findings and Recommendations

Project Schedule and Management

Recommendations	Status
<ul style="list-style-type: none">• Losing key resources during the critical stages of the project can be detrimental to the completion and success of project activities. Additional developers from SSO were onboarded to assist with Tax development and Data Conversion. In addition, SSO assigned a new PM, who started in February 2022. The Project should also ensure it is effectively conducting Knowledge Transfer sessions with new resources who will be joining the project.	In Progress
<ul style="list-style-type: none">• As noted in Risk #28, the Project does not look to be on track to meet the October 2022 Go-Live date. SSO shared a Project Action Plan, however, the plan did not include details on the approach and methodology to meet the originally identified dates. The Project is now expected to consume some of the contingency in the future, causing a strain on the schedule. The IV&V team recommends exploring alternative options to re-baseline the Go-Live date which will take into account the expanded scope, and appropriately adjust 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.	In Progress
<ul style="list-style-type: none">• The Project should ensure the schedule in Smartsheets accounts for all user stories that require development and is consistent with the data that is shown in DevOps, including the state of each activity and whether it is complete or not.	In Progress
<ul style="list-style-type: none">• Resources should be informed ahead of time, to ensure they are available and are prepared for all meetings. The availability of DLIR SMEs should be accounted and planned for in the schedule, as they are expected to become more actively involved as testing and data conversion validation activities progress.	In Progress
<ul style="list-style-type: none">• The Project should consider adding slack to the Project Schedule to account for regression test-related activities. Regression test can help validate the quality of the application, provide a feedback cycle for newly developed features, identify any adverse effects, and mitigate them at the earliest.	Not Started


IV&V Findings and Recommendations

Requirements Management

#	Key Findings	Criticality Rating
12	<p>Issue – Delay in Employer Portal and Tax Scoping Activities May Impact Development Schedule: The Tax and Employer Portal modules are large scope activities that have not been incorporated into the Project Schedule. 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">• 02/28: The Tax lead from SSO, responsible for the design and development of tax related functionality was in Hawaii during the week of 02/21/22, to conduct in person user story authoring sessions. According to the Project Action Plan, SSO has shared a six-week plan with the DLIR SMEs, which details a strategy for the completion of scoping activities prior to development, and any changes made to the plan are reviewed with the DLIR Tax Team. However, this plan has not been widely shared with the Project team and the schedule on Smartsheets has also not been updated to reflect any progress that has been made. As noted in Risk #7, there are three activities as part of Tax – ‘Reserve Balance’, ‘Collections’, and ‘LMI’ with finish dates of 02/11/22, 02/18/22, and 02/18/22 respectively, that have not been completed as planned. All other activities as part of scoping have been pushed out to after February. Development activities were expected to resume in January, however, the status for development, according to Smartsheets, is ‘Not Started’. There is, therefore, limited clarity on the progress of scoping and development activities for the Tax workstream due to the disconnect between the information in the Project Action Plan and on Smartsheets. SSO should share regular updates during the PM meetings for the Project team to understand the progress and identify roadblocks for completion to prevent delays.	


IV&V Findings and Recommendations

Requirements Management

#	Key Findings	Criticality Rating
12	<ul style="list-style-type: none">Employer Portal (EP) development activities had been extended to 02/17/22, from 12/23/21. However, the Project did not meet the 02/17/22 date as identified in January, and a new date for completion has not been identified. While SSO reported that ~90% of development has been completed, the status for completion of activities in general is unclear as these activities are being tracked on an internal DevOps site not visible to the Project team, and the progress was also not reflected during the demos. For instance, During the EP demo conducted in the third week of February, SSO could not demonstrate the end-to-end processes, as the data had not been integrated with Data Station. There are additional development activities related to EP that will require corresponding Tax development activities to occur for full EP functionality to be realized. The dependencies need to be identified and accounted for in the schedule. These activities, if not accounted for, may increase the risk of pushing out the Go-Live date beyond October 2022.	


IV&V Findings and Recommendations

Requirements Management

#	Key Findings	Criticality Rating
38	<p>Risk – Undocumented Requirements for Non-Gap Functionality May Lead to Additional Effort and an Incomplete System: The Project conducted gap analysis sessions in July 2021, during which DLIR program experts assessed and analyzed the proposed SSO solution against DLIR’s needs for the final HUI Mod system. Through these sessions, the Project was able to identify which DLIR requirements were met out of the box by the SSO solution (“fit”, or “non-gap” requirements), and which would require configuration or customization of the solution, which in turn became the design and development effort (“gap” requirements). While this process allowed the Project to discuss the full set of requirements which need to be satisfied by the final solution (the combination of fit and gap requirements), it is unclear where or if the non-gap requirements were documented. There is a risk that all requirements have not been captured and documented, including those that do not require customizations as well as non-functional requirements. Without the full set of system requirements, it will not be possible to fully test the system to verify it meets all of DLIR’s needs. This could result in some requirements getting overlooked and not be implemented in the final system released to production, or that the missed requirements will not be discovered until UAT and result in re-work or delays.</p> <ul style="list-style-type: none">• 02/28: A user story scoping and acceptance criteria workshop has been scheduled for 03/02/22, with analysts from SSO and the SMEs from DLIR to identify and agree on a single process for user story authoring, across Benefits, Tax and Employer Portal workstreams. This could help the Project ensure that all requirements are captured and documented, to prevent re-work and delays downstream.	

IV&V Findings and Recommendations

Requirements Management

#	Key Findings	Criticality Rating
30	<p>Risk – Lack of Requirements Traceability Matrix May Lead to Missed Activities: 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">02/28: As the Project is steadily moving into Development and Testing activities, the Project understands the importance of creating an RTM. However, as noted in January, SSO did not share the Requirements Traceability Matrix as originally planned on 01/28/22. While DLIR is also working in parallel to track all requirements in one document, dates have not been identified for when the documents will be shared.	


IV&V Findings and Recommendations

Requirements Management

Recommendations	Status
<ul style="list-style-type: none">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, as development sprints are tied to the scoping of user stories.	In Progress
<ul style="list-style-type: none">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 should consider going onsite to conduct sessions in-person with SMEs. As required, the project should validate the effectiveness of the Tax DevOps sessions and identify additional corrective measures if needed, to prevent further delays to Tax and Employer Portal development activities.	In Progress
<ul style="list-style-type: none">As noted in Risk #30, the Project should create a Requirements Traceability Matrix (RTM) to include details on how user stories are mapped to sprint development, test scripts, and eventually to production releases. The RTM can help effectively identify any missing requirements and additional effort that needs to be accounted for in the schedule. There should be a mapping to the build release/sprint it was developed in, the Test Cases which show that the requirement works, and the release it gets deployed to production in. The project should also ensure that all required SMEs are involved in the scoping process.	Not Started
<ul style="list-style-type: none">The RTM should be created and consistently updated during the course of the Project and reflect changes based on scoping, development, and testing activities.	In Progress


IV&V Findings and Recommendations

Design and Development

#	Key Findings	Criticality Rating
21	<p>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 07/27/21, there were discussions around potentially moving two user stories from Sprint 1 to Sprint 2, but it was not clear which stories or what their complexity was.</p> <ul style="list-style-type: none">02/28: According to the Project Action Plan, SSO was expected to share reports on a weekly basis starting on 02/04/22, to include details on sprint activities - including user stories completed, deferred, and any issues identified in each sprint. However, these reports were not shared as originally planned on 02/04/22, and a new date has not been identified. As noted in previous reporting periods, 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. There is limited clarity on the progress of development activities, as the schedule on Smartsheets has not been updated and PM meetings were not held as planned in February. SSO should share status updates for the different workstreams, and also use the PM meetings as a forum to discuss and escalate any concerns the development team is facing.	

IV&V Findings and Recommendations

Design and Development

#	Key Findings	Criticality Rating
31	<p>Risk – Delay in Tax Development Activities May Impact Schedule: 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 Risk #29, 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">02/28: There is limited clarity on the progress of scoping, development and testing activities for the Tax workstream. As noted in Risk #12, scoping activities for Tax have been pushed out to after February and development did not resume as originally planned in January. In addition, testing activities did not begin in February, as identified in the Project Action Plan. Also, revised timelines for development and testing activities have not been shared with the Project team.	



IV&V Findings and Recommendations

Design and Development

Recommendations	Status
<ul style="list-style-type: none">The Project should follow a documented process to share the status and updates on user stories that have been completed, those that have been 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 may also help avoid a common liability, where complex user stories are deferred to the final sprints and the Project is not able to maintain the same user story completion velocity, leading 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.	In Progress
<ul style="list-style-type: none">The Project should build dependencies into the schedule, as 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. Netacent should also share the six-week plan that is expected to outline a strategy to complete scoping activities ahead of development, at the earliest.	In Progress



IV&V Findings and Recommendations

Testing

#	Key Findings	Criticality Rating
24	<p>Issue – Lack of a Test Management Plan May Lead to Missed Activities and Miscommunication: 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"> 02/28: While the Test Management Plan was updated to include details on defect management, and manual gap testing for the Benefits workstream, it continues to be missing key information on the following - Tax workstream, Data Management - including details on the data that will be in each test environment, how the data will be created, how often the data will be refreshed, and when code will be promoted. The Plan should also include details on the associated timelines, entry and exit criteria, and the roles and responsibilities for each of the following test phases - Unit Testing, SIT, UAT, Performance, Security, Accessibility, and Failover testing. The testing approach for non-gap requirements, including those that do not require customizations, and non-functional requirements should also be documented in the plan and accounted for in the schedule. The Test Management Plan was not reviewed on 02/11/22 as originally discussed in January 2022. 	
40	<p>Risk – Lack of a Testing Approach for Interfaces With Partners May Delay Test Activities: The Project has several interface partners which send or receive data that is essential to DLIR business operations. These partners are external to the Project team and have not been included in project planning activities. This could lead to miscommunications about expectations for development activities, the timing and structure of testing activities, and pre-requisite activities that must take place before testing can begin.</p> <ul style="list-style-type: none"> 02/28: DLIR acknowledges the importance of identifying interfaces and has scheduled weekly meetings, starting mid-February 2022, to identify the complete list of interface partners. The meetings will be used as a forum to do a needs assessment - to understand how the identified interfaces work as well as to plan the future state of requirements. 	


IV&V Findings and Recommendations

Testing

#	Key Findings	Criticality Rating
33	<p>Risk – Limited Clarity on the Quality of Code May Lead to a High Volume of Defects and Rework: 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">02/28: <i>Post sprint validation activities have not been taking place as planned. Testing continues to be behind schedule, as the projected new finish dates identified on Smartsheets were not met. Prior to testing, the team should ensure testing environments are available as needed. The Project should agree on a plan to identify new dates for testing activities to begin, based on the progress of scoping and development. As testing activities take place, defects should be prioritized based on criticality, and there should be a mitigation plan to retest any blocked user stories. The project should identify the dates and resources for all post sprint validation activities and execute to it, to prevent downstream delays.</i>	
39	<p>Risk – Lack of Early End-to-End Testing Can Prevent the System from Working as Expected In UAT: The Test Management Plan does not include details on how end-to-end testing will take place. While the Project's approach for conducting unit testing and system testing seems sound to verify whether a specific use case works as expected, there is a risk that the final solution may not meet user expectations for a group of user stories that are combined into an overarching business process. Prior to UAT, development of a set of requirements in each sprint should be completed, and testing should be performed to validate functionality, integration, and end to end flow, to replicate real user scenarios and validate data integrity.</p> <ul style="list-style-type: none">02/28: <i>The Project should agree on a plan for end-to-end testing and ensure time is planned in the schedule. Testers should also be informed ahead of time, so that they are prepared and available when required, to prevent delays in downstream activities.</i>	

IV&V Findings and Recommendations

Testing

#	Key Findings	Criticality Rating
26	<p>Risk – Lack of Regression Testing could Lead to Defects in Previously Completed Code: The Project is not conducting regression testing which could lead to newly developed code in the current sprint breaking code developed in previous sprints without the Project's knowledge.</p> <ul style="list-style-type: none">• 02/28: 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 team. The Test Management Plan was not reviewed on 02/11/22 as originally planned in January.	


IV&V Findings and Recommendations

Testing

Recommendations	Status
<ul style="list-style-type: none">The Project should update the Test Management Plan to include information identified in Risk #24, to provide clarity on the process for testing across all testing phases. Also, SSO should align on a plan with DLIR , prior to testing, to understand the user stories that will be tested, and how they will be tested.	In Progress
<ul style="list-style-type: none">The Project should identify the full list of interfaces for which development or testing needs to be completed, and the approach for interface testing. This will help DLIR inform the partners, and ensure time is planned in the schedule for testing. For each partner, the Project should identify the direction of the interface (send or receive), the frequency of communication, the required format, the key point of contact for the interface partner, the testing window and environment that will be used to test the interface, and any special considerations necessary for the interface, such as proof of a security audit prior to gaining access to the partner's test environment.	Not Started
<ul style="list-style-type: none">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. 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 are pushed out further, there is a risk that the revised dates identified for the completion of Testing will not be met.	In Progress
<ul style="list-style-type: none">End-to-end testing is used to determine if the interaction between individual modules and any dependencies are working accurately. To reduce the number of errors prior to UAT, the Project should plan for and align on resources and timeline to conduct integration testing ,which covers sets of user stories instead of only individual user stories.	Not Started
<ul style="list-style-type: none">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	<p>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.</p> <ul style="list-style-type: none">• <i>02/28: According to the Project Action Plan shared by SSO, the final version of the Data Conversion plan is currently in progress, however a revised timeline has not been identified for the documents to be shared. The draft version of the plan continues to be missing key information on roles and responsibilities (both from SSO and DLIR), and details on testing and validation of the converted data, as well as a timeline for when the different phases of testing will take place. In addition, the initial stabilization reports for Data Conversion were not shared in February 2022 as noted in the Project Action Plan.</i>• <i>Testing and validation of converted data are essential to understand the quality of the data that has been converted, including identifying issues with record counts and understanding if records were missed because of bad data or as a result of issues with the conversion process. This information is needed to plan the total number of sprints required for the data conversion process.</i>	

IV&V Findings and Recommendations

Data Management

#	Key Findings	Criticality Rating
35	<p>Risk – Limited Clarity on Data Conversion Runs May Lead to Misunderstanding and Rework: 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">02/28: It was observed that 134/233 tables were converted across 13 sprints with an average of 10.3 tables/sprint. At the current velocity, it will take another 10 sprints to convert the remaining 99 tables. “Completed” essentially means that only a first pass was completed. SSO did not share the two reports – Conversion Disabled Report and Data Profiling Report, as originally planned for February 2022. The two reports are expected to include details on the data that has been converted. Additional sprints may be required based on any errors generated and details shared in the report, not currently planned for in the schedule. The Project needs to align on a plan for testing and validation of the data that has been converted, including resolving any environment related issues.	



IV&V Findings and Recommendations

Data Management

Recommendations	Status
<ul style="list-style-type: none">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.	In Progress
<ul style="list-style-type: none">As a best practice, the IV&V team recommends that the Data Migration Plan include 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
<ul style="list-style-type: none">It is recommended that as validation activities progress, SSO will 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 will help provide better visibility to the project management team to ensure future plans are realistic.	In Progress

IV&V Findings and Recommendations

Security

#	Key Findings	Criticality Rating
36	<p>Risk – Lack of a System Security Plan Can Increase the Risk of Security Incidents and Prevent Access to Key Interface Partners: 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.</p> <ul style="list-style-type: none">• 02/28: As noted in the January reporting period, there were no significant developments.	
37	<p>Risk – Lack of Clarity on Production Data Usage in Non-Production Environments Could Lead to Data Breaches: 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.</p> <ul style="list-style-type: none">• 02/28: As noted in the January 2022 reporting period, there were no significant developments.	


IV&V Findings and Recommendations

Security

Recommendations	Status
<ul style="list-style-type: none">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 (MOAs) with external department participants that obligates them to follow security standards established by the project.	Not Started
<ul style="list-style-type: none">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.	Not Started

IV&V Findings and Recommendations

Organizational Change Management

#	Key Findings	Criticality Rating
41	New Risk – Lack of a Well Defined OCM Strategy Can Create Negative Impacts Such as Schedule Slippage and Reduce End User Buy-In and Adoption: There is a risk that the lack of a well-defined OCM strategy can cost the project team a significant amount of time and effort in managing pushback and readiness issues from all stakeholders. There are concerns that stakeholders may resist important project directives or requests, including opposition that could result in department readiness issues, end-user confusion, and ultimately pose a significant risk to the project schedule if information is not communicated in a timely manner. Implementing an enhanced OCM strategy which incorporates early outreach to DLIR stakeholders from all affected program areas, and reinforced through regular updates, will help reduce negative impacts such as schedule slippage and surprises to stakeholders, and in turn, increase positive impacts such as end-user buy-in and adoption.	




IV&V Findings and Recommendations

Organizational Change Management

Recommendations	Status
<ul style="list-style-type: none">It is in the best interest of the project to ensure there is significant end-user buy-in and adoption. OCM strategies should include relationship building activities, institution of departmental change agents, establishing clear communication channels, including discussion forums to address questions/clarifications from stakeholders and establishing effective metrics for monitoring each department's level of understanding and buy-in. Projects can also benefit greatly from the use of departmental change agents as part of an effect OCM strategy. If organized well, given clear objectives, and well supervised, these agents can make inroads into departments for the project where leadership level communications and activities may fall short. In-person information sharing, and regular check-ins are often effective and can include visual process flows that clearly depict processes, their involvement, expectations, and lead to open discussions about readiness and possible problem areas. The project can use these opportunities to clearly communicate and reinforce readiness deadlines/milestones and instill a sense of urgency. The project team should also seek to set clear expectations in initial meetings and require that each agency/stakeholder group is represented or that the departments assign the required points of contact (with phone numbers) for each functional group. The OCM team should establish positive working relationships with Points of Contacts (POCs) and leverage these relationships for more efficient communications.	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	7. Sprint Review meetings
2. Data Conversion Scrum meetings	8. Mainframe Interfaces Meeting
3. Working Group meetings	9. Project Issues and Structure Meeting – 02/08/22
4. HUI Mod Notifications meetings	10. January IV&V Report review – 02/23/22
5. Overpayments and Collections User Story Authoring sessions	
6. Benefits Sprint Planning 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