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August 11, 2021

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

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

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

Pursuant to HRS section 27-43.6, which requires the Chief Information Officer to submit applicable independent verification and validation reports to the Legislature within ten days of receiving the report, please find attached the report the Office of Enterprise Technology Services received for the State of Hawaii Department of Human Services' Systems 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  
Chief Information Officer  
State of Hawai'i

Attachment (2)



# Hawaii Department of Human Services Systems Modernization Project

Final IV&V Status Report  
for Reporting Period: June 1 - 30, 2021

*Submitted: July 14, 2021*

# Overview

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- [Executive Summary](#)
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Solutions that Matter

The background is a solid blue gradient. It features several abstract geometric elements: a cluster of overlapping squares and rectangles in various shades of blue on the left side; a single white-outlined square positioned directly behind the text; and a series of squares and rectangles on the right side, some connected by thin white lines, suggesting a flow or process.

# Executive Summary







# Executive Summary



In June, IV&V observed an increase in the overall pace of the project as supported by the number deliverables in the review cycle and various project meetings. Key project results include:









- Release 0.3 Lessons Learned Survey results were published.
- Release 0.4 System Testing completed and UAT began.
- Release 0.5 is in the Development phase.
- The ASI published a draft revised schedule to adjust for the delays due to the KOLEA ATC impact (the CMS required KOLEA modifications are causing a delay of the integration with BES) and CMM Interview.
- The ASI proposed process changes to DHS to streamline project activities and reduce Deliverable and Testing rework.
- The ASI and their subcontractor added System Analyst and Developer staff.

Although the project schedule has not been approved by DHS, the project team is moving forward with the proposed schedule. However, without a fully resourced schedule and the ability to report the velocity of the CMM and FMM development teams, the schedule continues to be high risk to the project. The ASI proposed process changes to streamline the design process may reduce the schedule risk. IV&V will review the details of the process changes to include the communication plan, implementation plan and expected results/metrics when they are available.

Apr	May	Jun	Category	IV&V Observations
			Project Management	IV&V retains a high criticality rating for this category due to the lack of an approved Project Schedule, and inability to measure the velocity of the CMM and FMM development effort.
			System Design	No material updates to this category during June 2021.

# Executive Summary



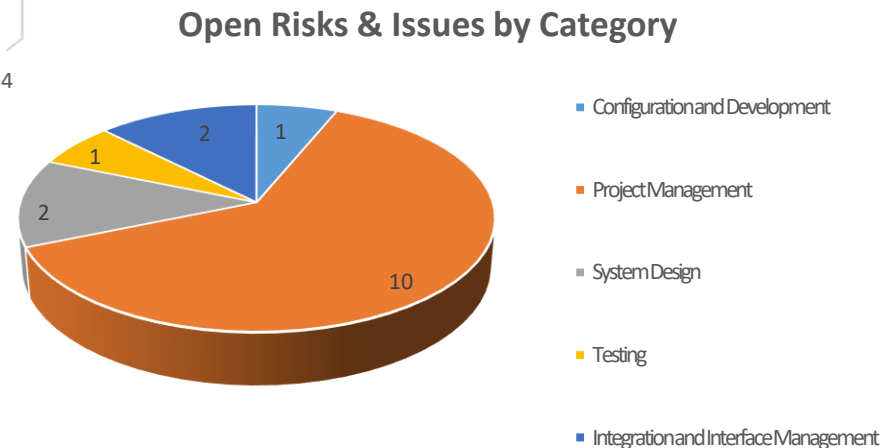
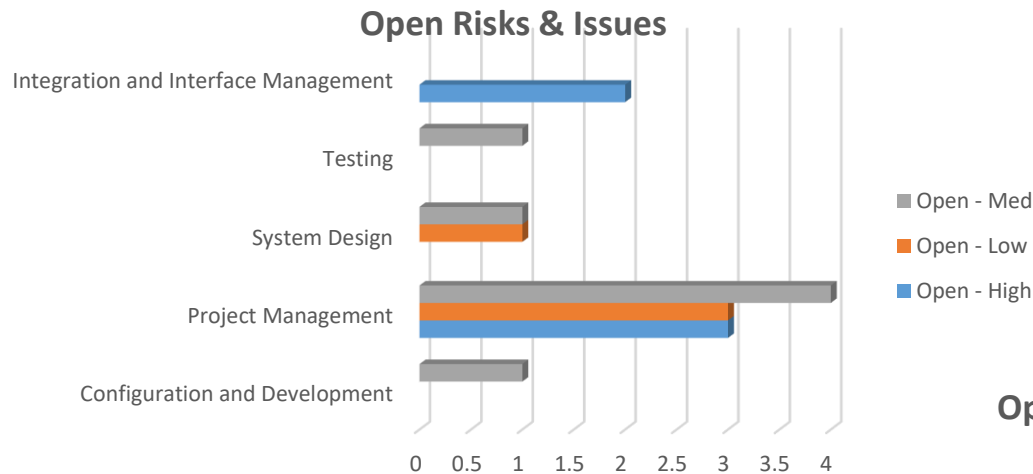
Apr	May	Jun	Category	IV&V Observations
			Configuration and Development	The ASI proposed SDLC process modifications as part of the revisions to the project schedule. Details of these changes are being developed and reviewed with DHS; IV&V will review when the information is made available.
			Integration and Interface Management	The project team continued to update the communication plans for each of the interface partners. The detailed interface schedule along with the testing approach and plan is in progress. The timing of the integration between the BES Modules (SSP, CMM, FMM) and interface partners remains a high criticality rating.
N/A			Testing	The ASI continued to research the test process to identify the root causes of the high number of UAT defects.

# IV&V Findings and Recommendations

# IV&V Findings and Recommendations



As of the June 2021 reporting period, PCG is tracking 16 open findings (8 risks and 8 issues) and has retired a total of 46 findings. Of the 16 open findings, 10 are related to Project Management, 2 in Integration and Interface Management, 2 in System Design and 1 each in Configuration and Development and Testing.

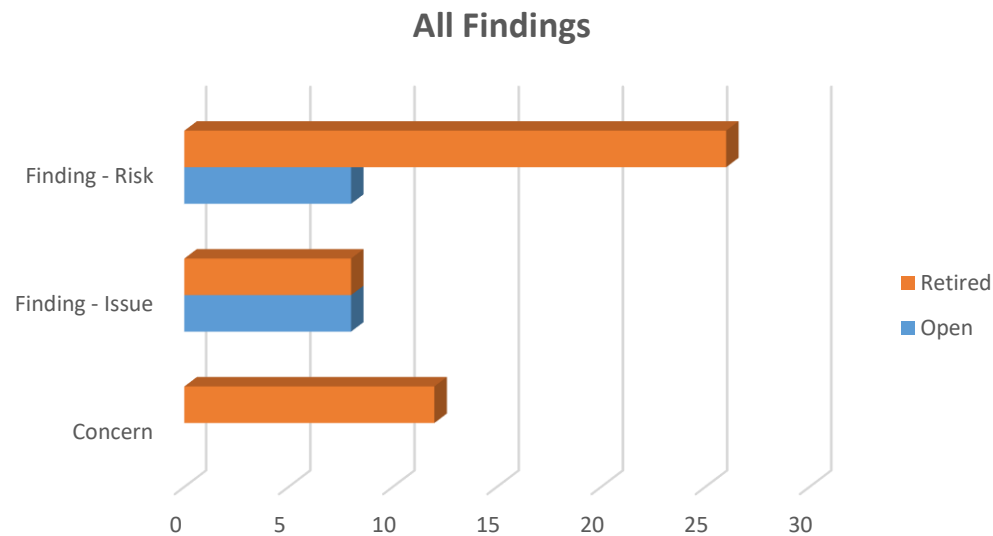




# IV&V Findings and Recommendations



*The following figure provides a breakdown of all IV&V findings (risks, issues, concerns) by status (open, retired).*



# IV&V Findings and Recommendations



## Findings Retired During the Reporting Period

#	Finding	Category
	No findings were retired in this reporting period.	

# IV&V Findings and Recommendations




## New Findings

#	Finding	Category
	No new findings were identified in this reporting period.	

# IV&V Findings and Recommendations



## Project Management

#	Key Findings	Criticality Rating
2	<p><b>Issue – Late Delivery of project deliverables may cause schedule delays.</b></p> <p>The ASI published a draft revised schedule on 6/17/2021. Comments and questions submitted by DHS and IV&amp;V are under review. The project team is moving forward with the revised schedule with the understanding that further revisions may be required prior to DHS acceptance.</p>	

Recommendations	Progress
<ul style="list-style-type: none"><li>DHS and the ASI agree and publish the revised schedule based on the KOLEA ATC impact and CMM development delays.</li></ul>	In process
<ul style="list-style-type: none"><li>When the revised schedule is published the project team should restart the weekly practice of reporting actions being taken for late tasks and develop mitigation plans for those tasks that may be late.</li></ul>	In process

# IV&V Findings and Recommendations



## Project Management


#	Key Findings	Criticality Rating
29	<p><b>Issue - Uncertainty and/or a lack of communication around long term architecture decisions could impact the project budget, schedule, system design, and planning decisions.</b></p> <p>The ASI reviewed the change order to implement 2 portals (BESSD and MQD) instead of a single consolidated portal. Some details of this change have yet to be provided and the stakeholders raised multiple questions and concerns. The ASI indicated that the project is considering replacing the existing State hub with Boomi toolsets, but details are not yet available.</p>	A green circle with a white 'L' inside, indicating a Low Criticality Rating.

Recommendations	Progress
<ul style="list-style-type: none"><li>DHS should finalize the Portal strategy and communicate the strategy with the stakeholders and project teams.</li></ul>	In process
<ul style="list-style-type: none"><li>The project should continue to vet possible architectural change impacts to the platform, M&amp;O, MQD, and BES systems before finalizing architectural decisions.</li></ul>	In process

# IV&V Findings and Recommendations



## Project Management

#	Key Findings	Criticality Rating
43	<p><b>Issue - DHS PMO project team members have transitioned off the project, which may cause gaps in knowledge transfer and leadership on the project.</b></p> <p>There are no material updates in this reporting period.</p>	

Recommendations	Progress
<ul style="list-style-type: none"><li>DHS continue to work with the appropriate organizations to identify the funds necessary to fill these positions.</li></ul>	In process

# IV&V Findings and Recommendations



## Project Management


#	Key Findings	Criticality Rating
47	<p><b>Risk – The COVID-19 pandemic and the related "stay at home" order could hinder project activities and negatively impact the project schedule and budget.</b></p> <p>The ASI continues to limit their office occupancy to 50% to comply with State mandates but has indicated that in-office team members continue to see increased productivity from in-person project collaboration. Some key DHS SME's will continue to work remotely which could pose a challenge to project productivity. Earlier concerns with COVID impacts to their offshore (India) team because of the spike in new cases appear to be subsiding. IV&amp;V changed the criticality of this finding from medium to low and will continue to monitor.</p>	

Recommendations	Progress
<ul style="list-style-type: none"><li>Suggest the project and DHS create a detailed, documented risk mitigation strategy and plan that is reviewed regularly and revised to address the current state of the COVID-19 threat and related impacts over the next 6 to 12 months. The plan should include the possible economic impacts to the state budget directly related to project resources.</li></ul>	In process
<ul style="list-style-type: none"><li>Send broad communications to stakeholders to assure clear understanding of changes to the project with this regard to impacts of COVID as well as clarifying communications as to what will remain the same.</li></ul>	In process

# IV&V Findings and Recommendations



## Project Management

#	Key Findings	Criticality Rating
48	<b>Risk – The CMS Outcomes-Based Certification Requirements have not been published by CMS, which may impact the project schedule and funding.</b> There are no material updates this month; IV&V will continue to monitor.	


Recommendations	Progress
<ul style="list-style-type: none"><li>DHS to continue dialogue with CMS regarding the project's approach to OBC and MITA alignment to ensure all CMS requirements are met by the BES Project.</li></ul>	In process



# IV&V Findings and Recommendations



## Project Management

#	Key Findings	Criticality Rating
49	<p><b>Issue – Poor quality project deliverables may impact system design, testing artifacts and the project schedule.</b></p> <p>No material update during this reporting period, DHS and IV&amp;V will review the ASI's revised process metrics when they are published.</p>	

Recommendations	Progress
<ul style="list-style-type: none"><li>IV&amp;V recommends that a facilitated root cause analysis be performed by the ASI with DHS and IV&amp;V in attendance. Quality issues are rarely generated by a single entity in a project, so there could potentially be multiple causes or root causes of this current condition. Once the root cause(s) are identified, IV&amp;V recommends immediate action be employed to resolve quality concerns on in-process deliverables prior to submission of subsequent deliverables.</li></ul>	In process
<ul style="list-style-type: none"><li>IV&amp;V recommends that the ASI review the Quality Management Plan to ensure that the project is working within the Quality guidelines. In particular, the ASI should evaluate and consider if it is in alignment with Section 3.1.2 Measure Project Quality, which states “ASI measures process and product quality by 1) selecting BES implementation process and product attributes to measure; 2) selecting component activities to measure; 3) defining value scales for each component activity; 4) recording observed activity values; and 5) combining the recorded attribute values into a single number called a process quality index.” IV&amp;V has not seen evidence indicating the ASI is utilizing metrics to measure its process and product quality.</li></ul>	In process

# IV&V Findings and Recommendations



## Project Management

#	Key Findings	Criticality Rating
54	<p><b>Risk – User Acceptance Testing (UAT) processes and timing of inputs required for UAT could lead to implementation delays and delivery of a solution that does not meet business needs or requirements.</b></p> <p>Release 0.4 UAT began on June 28th and the results of the Release 0.3 Lessons Learned survey were distributed by the ASI; the action plans are planned to be developed in July 2021. Although the action plans are not yet defined, the project team applied some process changes to Release 0.4 UAT including freezing the functional design and delaying the completion of SIT to resolve and retest defects prior to the start of UAT. These changes are anticipated to minimize rework by the DHS UAT team.</p>	M

Recommendations	Progress
<ul style="list-style-type: none"><li>Further develop the Release 0.3 Lessons Learned action plan to include target complete dates. Report progress in the weekly status meeting.</li></ul>	In process
<ul style="list-style-type: none"><li>All agreed upon actions to resolve issues called out in Lessons Learned should be added to project schedule so adequate timing is provided to support UAT preparation and execution.</li></ul>	In process
<ul style="list-style-type: none"><li>The ASI could conduct a debrief meeting with DHS after SIT and UAT have completed, summarizing work completed and follow-up actions required from ASI and DHS.</li></ul>	In process
<ul style="list-style-type: none"><li>Evaluate the process and/or schedule to determine if adjustments could streamline the process for the UAT test team to plan and create UAT test cases, minimizing rework.</li></ul>	In process

# IV&V Findings and Recommendations



## Project Management

#	Key Findings	Criticality Rating
58	<p><b>Risk – The data conversion effort lacks leadership, consistency in data governance, and effective communications which may impact the schedule.</b></p> <p>The ASI and DHS continue tactical work related to data conversion (data cleansing, source to target mapping, etc.). While the current schedule includes data conversion tasks, it is unclear when converted data will be used to conduct SIT and UAT testing. The data conversion team is providing a weekly status update and is updating confluence with the project documents along with key metrics to accurately measure and report data conversion progress.</p>	

Recommendations	Progress
• Assign a dedicated project leader to actively manage all aspects of the Data Conversion effort. Consider a full-time position until the Data Conversion effort is completed.	Complete
• Investigate and resolve communication issues that are suspected to be delaying the data conversion effort.	Complete
• Prioritize the conversion activities to validate the key tasks are addressed early to avoid further delays considering the complexity of the later releases.	In process
• Update the timing of the project Data Conversion meeting from every-other-week to weekly.	Complete
• The ASI should develop reports with metrics that accurately measure the Data Conversion progress along with a high-level pictorial view of conversion activities planned for each release.	In process
• Add detailed Conversion tasks to the Project Schedule.	In process
• The DHS Data Governance committee needs to clarify the usage of MDM so the BES conversion team aligns to the planned governance structure.	In process

# IV&V Findings and Recommendations



## Project Management

#	Key Findings	Criticality Rating
62	<p><b>Issue – Inability to measure development team velocity may impact the projects' ability to forecast the delivery date of the remaining features.</b></p> <p>No progress to report this reporting period. The CMM/FMM team is unable to measure sprint velocity and there are no story point estimates in the FCM_ALL backlog. Velocity is being tracked for the SSP sprint team but they consistently commit to more work than their velocity indicates they can complete in a single sprint. This is a symptom of not using velocity as a planning tool during Sprint Planning.</p>	

Recommendations	Progress
<ul style="list-style-type: none"><li>The ASI work with the subcontractor Scrum Masters to calculate the average velocity from past iterations to be used as a historical reference.</li></ul>	In process
<ul style="list-style-type: none"><li>Moving forward, the development teams should provide the ASI with Sprint and Product Burndown charts at the end of every iteration.</li></ul>	In process
<ul style="list-style-type: none"><li>To calculate velocity, user stories need assigned values (IV&amp;V recommends relative story points). If the developers are not currently assigning values to user stories, IV&amp;V recommends this become common practice.</li></ul>	In process

# IV&V Findings and Recommendations



## Project Management

#	Key Findings	Criticality Rating
65	<p><b>Risk - DHS BESSD knowledgeable staff are needed on the project to ensure the BES solution is designed to meet the business needs and requirements.</b></p> <p>In the 6/9/2021 Status Meeting, DHS reported they added a Reports SME and two additional staff to the UAT test team. DHS continues recruiting for the BES PM position.</p>	

Recommendations	Progress
<ul style="list-style-type: none"><li>DHS continue to identify BESSD SME's to support the project as the project progresses.</li></ul>	In process
<ul style="list-style-type: none"><li>DHS develop a project team list that identifies the participants along with their roles and areas of expertise to be used as short-term needs are identified.</li></ul>	Complete
<ul style="list-style-type: none"><li>DHS utilize the BI-4 Project Schedule report developed by the ASI to identify those tasks owned by DHS in the short team in addition to the 4-month look-ahead to identify time frames and activities where there is a high-demand on DHS resources.</li></ul>	Complete
<ul style="list-style-type: none"><li>Identify and on-board a replacement BES Project Manager.</li></ul>	In process
<ul style="list-style-type: none"><li>Continue coaching the new BES Product Owners to ensure the new system takes advantage of new technologies and aligns to the planned business processes.</li></ul>	In process

# IV&V Findings and Recommendations



## Integration and Interface Management


#	Key Findings	Criticality Rating
60	<p><b>Risk – System Integration of the BES Modules (CMM, FMM, SSP) will be developed in the later releases vs. a continuous integration model within each release which may cause schedule delays.</b></p> <p>This reporting period, IV&amp;V reviewed the SSP Integrations document in Confluence that outlines the integration approaches for the identified SSP integration points. The document was designed as a reference for developers and contains the expected low-level details (API calls, request/response). To prepare for future knowledge transfer, it should also include high-level information (specific module names associated with each integration point). The SSP integration document will continue to evolve and is a positive step towards the mitigation of this risk.</p>	

Recommendations	Progress
<ul style="list-style-type: none"><li>• Prioritize the build of integration points within each module and the creation of scripts (API calls) required for integration.</li></ul>	In process
<ul style="list-style-type: none"><li>• Each release demo should be a collaborative effort across all modules (end-to-end solution) and verified against system-level requirements.</li></ul>	Not started
<ul style="list-style-type: none"><li>• If the ASI needs all the remaining releases to demonstrate an end-to-end solution of the identified business processes across all modules, IV&amp;V recommends planning and communicating the mitigation strategy for handling risks associated with a 'big bang' release.</li></ul>	Not started

# IV&V Findings and Recommendations



## Integration and Interface Management


#	Key Findings	Criticality Rating
63	<p><b>Risk – The lack of early planning and coordination with interface partners may result in schedule delays.</b></p> <p>The project team continues to update the interface planning documents. IV&amp;V conducted another review of the Communication Plans and found that 3 interface partners' contacts have not been documented, 4 MOAs have not been approved, and testing dates have not been confirmed for 20 of the interfaces.</p>	

Recommendations	Progress
• Establish a communication plan for each interface partner for the duration of the BES DDI activities to include the contact's name and information.	In process
• Define a detailed schedule for each interface to include milestone dates, coordination, and execution and share with the interface partners.	In process
• Determine which deliverable will include the details associated with the planned connectivity and detailed technical designs of all interfaces.	In process
• Complete all MOAs and obtain approval.	In process
• Confirm testing dates with interface partners in writing.	In process
• Distribute preparation procedures for interface implementation to the interface partners.	In process

# IV&V Findings and Recommendations



## Configuration and Development

#	Key Findings	Criticality Rating
16	<p><b>Issue – Lack of clear understanding of the DDI approach may reduce effectiveness of all SDLC Processes.</b></p> <p>The ASI is drafting changes to their current development approach to address DHS concerns. Details of the changes have yet to be fully delivered, vetted, and communicated to the DHS project team. IV&amp;V will review proposed changes once more details become available.</p>	

Recommendations	Progress
<ul style="list-style-type: none"><li>ASI provide an additional DDI approach overview session for stakeholders who still may be unclear on elements of the methodology, especially new product owners.</li></ul>	In process
<ul style="list-style-type: none"><li>ASI make available their DDI approach documentation/materials for stakeholders to review and/or refresh their knowledge on demand.</li></ul>	In process



# IV&V Findings and Recommendations



## System Design


#	Key Findings	Criticality Rating
38	<p><b>Issue – Due to the sequencing of JADs addressing Workflow at the end instead of during current JAD sessions, the project could be faced with significant design rework, which may result in schedule delays, and impact the quality of solution design.</b></p> <p>No material update for this reporting period.</p>	A green circle with a white 'L' inside, indicating a Low Criticality Rating.

Recommendations	Progress
• ASI to quickly define how the workflow/task functionality will flow and provide training to the facilitators.	In process
• ASI augment the project team with seasoned business analysts, with significant workflow expertise, to review workflow/task functionality and integrate into systems designs with input from DHS.	In process
• ASI to develop a high-level and detailed view of workflow for the BES application. This will provide the project team with a visual view of the workflow processes and integration points with the workflow software.	Not started

# IV&V Findings and Recommendations



## System Design

#	Key Findings	Criticality Rating
61	<p><b>Issue – Poorly executed JAD and "design sessions" could lead to inaccurate design and rework.</b></p> <p>No JAD or Design Sessions were conducted in this reporting period. However, the ASI provided IV&amp;V a brief overview of the proposed process change to conduct design sprints in concert with the project schedule revisions. In addition, the ASI subcontractor added two Systems Analysts, but it is unclear if they have Integrated Eligibility experience.</p>	

Recommendations	Progress
<ul style="list-style-type: none"><li>JAD and design sessions should be led by experienced senior BAs, with goals, objectives and results communicated to all participants.</li></ul>	In process
<ul style="list-style-type: none"><li>The facilitator should use their expertise to drive discussions through leading questions.</li></ul>	In process
<ul style="list-style-type: none"><li>The DHS and ASI product owners should actively participate to ensure the system meets the requirements, designed taking advantage of new technology and aligns to the 'to be' business process.</li></ul>	In process
<ul style="list-style-type: none"><li>The ASI should back-track significant differences in design direction to determine the root cause in an effort to identify these items as early in the SDLC as possible.</li></ul>	In process
<ul style="list-style-type: none"><li>The Product Owners should have more direct interaction with the development team, proactively seeking collaboration.</li></ul>	In process

# IV&V Findings and Recommendations



## Testing

#	Key Findings	Criticality Rating
66	<p><b>Risk – The number of issues/defects found in UAT may cause planned work in the future sprints to be delayed due to the prioritization of the resolution of issues/defects found in UAT.</b></p> <p>There are no material updates to this finding; the ASI continues to conduct a root cause analysis. Concern still remains that defects reported in UAT exceed the number of defects reported during System Test as shown through defect leakage metrics.</p>	

Recommendations	Progress
• Performing a joint (DHS/ASI/IV&V) Root Cause Analysis (RCA) to identify and take corrective actions	In process
• Adjust the project plan and provide reasonable scope for UAT for subsequent releases taking into account the number of defects and testing time needed.	In process
• Validate all UAT defects are retested in SIT to ensure they are included in Regression Testing.	In process
• System and Integration testing be executed more rigorously.	In process
• The ASI should report on leakage and DHS should monitor this Key Performance Indicator (KPI).	Not started
• FDD's be complete and frozen prior to the completion of SIT and that completion of FDD's be added to the exit criteria for SIT and entrance criteria for UAT. An alternate recommendation would be to adjust the process to minimize schedule slippage and rework by the SIT and UAT teams.	In process

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# IV&V Status

# IV&V Engagement Status



IV&V Engagement Area	Apr	May	Jun	Comments
IV&V Budget				
IV&V Schedule				
IV&V Deliverables				The Release 0.3 SIT Test Case Analysis was published. The Release 0.3 UAT Test Case Analysis was published. The Release 0.4 SIT Shadow Testing results was published.
Centers for Medicare and Medicaid Services (CMS) IV&V Progress Reports				The first quarterly CMS Eligibility and Enrollment (E&E) IV&V Progress Report is on hold until IV&V and DHS determine the appropriate time to submit the report.
CMS Milestone Reviews				The first CMS Milestone Review date has not yet been determined.
IV&V Staffing				Trish Berger and Andy Wergedal joined the IV&V team.
IV&V Scope				

Engagement Rating Legend		
	The engagement area is within acceptable parameters.	
		The engagement area is somewhat outside acceptable parameters.
		The engagement area poses a significant risk to the IV&V project quality and requires immediate attention.



- IV&V activities in the June reporting period:
  - Completed – May Monthly Status Report
  - Ongoing – Review the BES Project Artifacts and Deliverable
  - Ongoing – Attend BES project meetings, (see [Additional Inputs](#) pages for details)
  - Reviewed available ASI Original Contract and BES Optimization contract amendment documentation
- Planned IV&V activities for the July reporting period:
  - Ongoing – Observe BES Design and Development sessions as scheduled
  - Ongoing – Observe Bi-Weekly Project Status meetings
  - Ongoing – Observe Weekly Architecture meetings
  - Ongoing – Observe Weekly/Monthly Security meetings
  - Ongoing – Observe Agile Development meetings
  - Ongoing – Monthly IV&V findings meetings with the ASI
  - Ongoing – Monthly IV&V Draft Report Review with DHS, ETS and ASI
  - Ongoing – Participate in weekly DHS and IV&V Touch Base meetings
  - Ongoing – Review BES artifacts and deliverables

# Deliverables Reviewed



Deliverable Name	Deliverable Date	Version
BI-22 Release 0.4 System Test Report – DRAFT	6/23/2021	Draft
BI-14 Release 0.4 Technical Design Document - CMM/CF (Iteration 1)	6/21/2021	V1
BI-10 Release 0.4 Self Service Portal - Report A Change (Iteration 2)	6/18/2021	V2
BI-5 Project Schedule	6/17/2021	Draft
BI-14 Release 0.4 Technical Design Document - SSP	6/8/2021	Draft
BI-10 Release 0.4 Self Service Portal - Report A Change	6/1/2021	4.0
BI-14 Release 0.4 Technical Design Document - CMM/CF – DRAFT	5/27/2021	Draft
BI-14 Release 0.4 Technical Design Document - SSP (Iteration 1)	6/30/2021	V1

# Additional Inputs – Artifacts



Deliverable Name	Artifact Date	Version
Unisys Contract Amendment 3	4/17/2020	N/A
Two Portal Change Request	6/16/2021	1.0
FNS Handbook 901	01/2020	V2.4
BES Risks and Issues Log	06/02/2021 06/09/2021 06/16/2021 06/23/2021 06/30/2021	N/A
BES Weekly Schedule (BI-5)	06/17/2021 06/28/2021	N/A
BES Weekly Status Report	06/02/2021 06/09/2021 06/16/2021 06/23/2021 06/30/2021	N/A
Java Code Standards	09/11/2020	1.6
BES Shared Interfaces	N/A	N/A
R0.3 Codebase	05/11/2021	0.3





## Meetings and/or Sessions Attended/Observed:

1. Weekly Platform Status Meeting – 6/1/2021, 6/8/2021, 6/22/2021, 6/29/2021
2. Weekly Architecture Meeting – 6/2/2021, 6/16/2021, 6/23/2021, 6/30/2021
3. Weekly Project Status Meeting – 6/2/2021, 6/9/2021, 6/16/2021, 6/23/2021
4. Weekly BES PMO and IV&V Touch Base – 6/23/2021
5. Weekly BES Dev Stand-up – 6/2/2021, 6/9/2021, 6/16/2021, 6/30/2021
6. Weekly SSP Backlog Grooming Session – 6/2/2021, 6/10/2021, 6/17/2021, 6/23/2021, 6/30/2021
7. BES Data Conversion Meeting – 6/3/2021, 6/7/2021, 6/14/2021, 6/21/2021, 6/28/2021
8. Weekly Schedule Review Meeting – 6/1/2021, 6/10/2021, 6/15/2021, 6/22/2021, 6/29/2021
9. Weekly IV&V Team Meeting – 6/1/2021, 6/7/2021, 6/10/2021, 6/14/2021, 6/17/2021, 6/21/2021
10. IV&V Team – BI-5 review check-in – 6/15/2021
11. R0.5 Screen Prototype – CMM DSNAP – 6/2/2021
12. Release Checkpoint Meeting – 6/3/2021,
13. R0.5 Screen Prototype – CMM CO05w and CO05r – 6/3/2021
14. R0.4 Weekly SIT Status – 6/3/2021, 6/10/2021
15. R0.5 Sprint Demo – CO05t Manage Sponsor Information – 6/4/2021
16. Release 0.3 Code Questions ASI and IV&V – 6/7/2021
17. DHS and IV&V Touch Base – 6/7/2021, 6/21/2021
18. R0.6 Screen Mockup – FMM FM18 – FM21 & FM23 – 6/7/2021
19. Sprint Demo | SSP – 6/7/2021, 6/21/2021
20. R0.4 BI-14 Walk-Through – Application Registration, Scheduling, Appointments, Standardized Address, Case Notes – 6/8/2021
21. Implementation Planning – 6/8/2021, 6/22/2021
22. BES Interface Planning BESSD, ASI, IV&V – 6/9/2021
23. R0.5 Screen Prototype – SSP QM01, QM02, and QM03 – 6/9/2021
24. R0.5 Screen Prototype – CMM CO05j Manage Asset Information – 6/10/2021
25. Enterprise Operations Committee – 6/10/2021, 6/24/2021
26. IV&V and CCWIS Check-in – 6/14/2021
27. CMM/CF/FMM Bi-Weekly Backlog Grooming – 6/15/2021
28. ASI/IV&V Mid-month Check-in – 6/16/2021
29. R0.6 Screen Prototype – FM22, FM22a, FM25 – 6/16/2021
30. BES CCB Monthly Meeting – 6/23/2021
31. HI BES ASI and IV&V Touch Base – Technical – 6/17/2021
32. DHS ESC – 6/17/2021



## Meetings and/or Sessions Attended/Observed:




33. R0.5 Screen Prototype – CMM CO05j Manage Asset Information (Part 2) -6/17/2021
34. R0.5 Sprint Demo – CMM CO05f and CO05o – 6/18/2021
35. R0.5 Screen Prototype – CO05n and CO05q – 6/18/2021
36. R0.5 Walk-Through – MDM ICD's – 6/22/2021
37. HI BES ASI and IV&V Touch Base – Functional – 6/22/2021
38. R0.4 BI-14 Walk-Through – SSP – 6/22/2021
39. R0.5 Prototype Review – SSP Renewals- 6/22/2021
40. R0.4 BI-10 Comment Review – SSP RAC – 6/22/2021
41. Lunch and Learn – 6/25/2021
42. Release 0.3 Lessons Learned – 06/28/2021
43. ASI and IV&V Requirement Tracking in Aha – 06/29/2021
44. Monthly Project Risk and Issue Review Meeting – 06/29/2021
45. R0.5 Prototype Review – SSP Renewals (Part 2) – 06/29/2021
46. ASI and IV&V June Pre-Draft Review – 06/30/2021

The background is a solid blue color. It is decorated with various abstract geometric shapes, including squares and rectangles of different sizes and shades of blue. Some shapes are solid, while others are outlined in white. These shapes are scattered across the page, with a higher concentration on the left side and some on the right side. The word "Appendices" is written in a white, serif font, positioned in the lower-left quadrant of the page.

# Appendices



# Appendix A – IV&V Criticality Ratings

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 – Findings Log

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- The complete Findings Log for the BES Project is provided in a separate file.

# Appendix C – Acronyms and Glossary



Acronym	Definition
APD	Advance Planning Document
ASI	Application System Integrator
BES	Benefits Eligibility Solution
CCWIS	Comprehensive Child Welfare Information System
CM	Configuration Management
CMMI	Capability Maturity Model Integration
CMS	Center for Medicare and Medicaid Services
CR	Change Request
DDI	Design, Development and Implementation
DED	Deliverable Expectation Document
DHS	Hawaii Department of Human Services
DLV	Deliverable
E&E	Eligibility and Enrollment
EA	Enterprise Architecture
ECM	Enterprise Content Management (FileNet and DataCap)
ESI	Enterprise System Integrator (Platform Vendor)
ETS	State of Hawaii Office of Enterprise Technology Services
FIPS	Federal Information Processing Standard
HIPAA	Health Information Portability and Accountability Act of 1996
IDM	Identity and Access Management (from KOLEA to State Hub)
IEEE	Institute of Electrical and Electronics Engineers
IES	Integrated Eligibility Solution
ITIL	Information Technology Infrastructure Library



# Appendix C – Acronyms and Glossary

Acronym	Definition
IV&V	Independent Verification and Validation
KOLEA	Kauhale On-Line Eligibility Assistance
M&O	Maintenance & Operations
MEELC	Medicaid Eligibility and Enrollment Life Cycle
MEET	Medicaid Eligibility and Enrollment Toolkit
MOU	Memorandum of Understanding
MQD	Hawaii Department of Human Services MedQuest Division
NIST	National Institute of Standards and Technology
OE	Operating Environment
OIT	Department of Human Services Office of Information Technology
PIP	Performance/Process Improvement Plan
PMBOK®	Project Management Body of Knowledge
PMI	Project Management Institute
PMO	Project/Program Management Office
PMP	Project Management Plan
QA	Quality Assurance
QM	Quality Management
RFP	Request for Proposal
ROM	Rough Order of Magnitude
RMP	Requirements Management Plan
RTM	Requirements Traceability Matrix
SEI	Software Engineering Institute
SLA	Service-Level Agreement
SME	Subject Matter Expert

# Appendix C – Acronyms and Glossary

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Acronym	Definition
SOA	Service Oriented Architecture
SOW	Statement of Work, Scope of Work
VVP	Software Verification and Validation Plan
XLC	Expedited Life Cycle



# Appendix D – Background Information



## Systems Modernization Project

The DHS Enterprise Program Roadmap includes contracting with three separate vendors with the following high-level scope:

- ESI or Platform Vendor – responsible for the shared technology and services required for multiple Application vendors to implement and support functionality that leverages the DHS Enterprise Platform.
- ASI or ASI Vendor – responsible for the DDI of the Benefits Eligibility Solution (BES Project) enhancing the currently implemented Medicaid E&E Solution (KOLEA) and providing support for the combined Solutions.
- CCWIS Vendor – responsible for the DDI of the CCWIS Solution to meet the needs of child welfare services and adult protective services (CCWIS Project) and providing support for the Solution.

## Systems Modernization IV&V Project

IV&V performs objective assessments of the design, development/configuration and implementation (DDI) of DHS' System Modernization Projects. DHS has identified three high-risk areas where IV&V services are required:

- Transition of M&O from DHS' incumbent vendor to the ESI and ASI vendors
- BES DDI
- CCWIS DDI

On the BES DDI Project, IV&V is responsible for:

- Evaluating efforts performed by the Project (processes, methods, activities) for consistency with federal requirements and industry best practices and standards
- Reviewing or validating the work effort performed and deliverables produced by the ASI vendor as well as that of DHS to ensure alignment with project requirements
- Anticipating project risks, monitoring project issues and risks, and recommending potential risk mitigation strategies and issue resolutions throughout the project's life cycle
- Developing and providing independent project oversight reports to DHS, ASI vendors, State of Hawaii Office of Enterprise Technology Services (ETS) and DHS' Federal partners

# Appendix D – Background Information



## 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's Eclipse IV&V® Technical Assessment 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.

## IV&V Assessment Categories for the BES Project

- |  |                              |
|--|------------------------------|
| • Project Management                   | • Security and Privacy       |
| • Requirements Analysis & Management   | • Testing                    |
| • System Design                        | • OCM and Knowledge Transfer |
| • Configuration and Development        | • Pilot Test Deployment      |
| • Integration and Interface Management | • Deployment                 |



**Solutions that Matter**

	Title	Reporter	Finding Type	Identified On	Category	Observation	Significance	Recommendation	Event Horizon	Impact	Probability	Analyst PV	Finding Status	Date Retired	Status Update	Client Comments	Vendor Comments
66	The number of issues/defects found in UAT may cause planned work in the future sprints to be delayed due to the prioritization of the resolution of issue/defects found in UAT.	Earl Barba	Finding - Risk	3/29/2021	Testing	During discussions of UAT progress and metrics the number of defects found during this phase of testing appears greater than what would be expected during UAT. On 3/29/2021 at the conclusion of R0.3 Sprint 3 there were 200 reported defects (4 High, 10 Medium, and 292 Low Severity) where 181 are "Unresolved", 108 are documented as "Not a Defect", and 17 are marked as "Done". Since the functionality had previously been Unit, System and Integration, and the needs of the state clarified during JAD sessions very few defects are expected. As such, the amount of testing expected to be completed during the current R0.3 will not be met and will be pushed to the next release. If that trend continues UAT may not complete as planned and the schedule negatively affected. Additionally, since more defects are being reported and corrected than expected the rate of closure for defects, along with the time needed to retest those corrects, and regression test the functionality additional risk exists to the planned schedule. At the end of R0.3 it was reported that 44 Issues were "Done" and 238 Issues were Incomplete (20 of which had all of their sub-tasks complete) and will be moved to the next Sprint designated SSP R0.3 UAT Sprint 4.	Since UAT is the vehicle for users to assure that the functionality developed and delivered meets their needs it is important that UAT be successfully completed. The high number of defects reported along with not meeting planned progress there may be an inclination to shorten the time needed to complete UAT.	Performing a joint (DHS/ASI/IVV) Root Cause Analysis (RCA) to identify and take corrective actions. Adjust the project plan and provide reasonable scope for UAT for subsequent releases taking into account the number of defects and testing time needed as reflected in current trending of UAT progress. Validate all UAT defects are retested in ST to ensure they are included in Regression Testing. System and Integration testing be executed more rigorously. The ASI report on leakage and DHS should monitor this key Performance Indicator (KPI). FPOC has completed and frozen prior to the completion of ST and that completion of FPOC's be added to the exit criteria for ST and enhance criteria for UAT. An alternate recommendation would be to adjust the process to minimize schedule slippage and rework by the ST and UAT teams.	Immediate	3	3	Med	Open	6/28/2021 - There has been no material update to this finding, the ASI continues to conduct a root cause analysis. Consenr still remains that defects reported in UAT exceed the number of defects reported during System Test. The data is shown through defect leakage metrics. 5/25/2021 - An industry standard metric used to identify the efficiency of System Testing is defect leakage, i.e., how many defects are missed/dilged during System testing. The formula used is Defect Leakage = (No. of Defects found in UAT / No. of Defects found in System testing). For Release 0.3 there were 28 "Not a Defect", 124 "Done", and 180 "Unresolved" UAT defects. The defect count was 199 "Not a Defect", 135 "Done", and 8 "Unresolved". Removing those defects marked "Not a Defect" for System Test and UAT counts there were 134 for System Test and 140 for UAT. By plugging those numbers into the formula, the result is 106.72%. Since the industry average for good testing processes is 10-12%, the defect leakage appears excessive for this project. 4/30/2021 - The ASI conducted an Internal Root Cause Analysis (RCA) that identified 3 main root causes for the high number of defects found in UAT - Duplication of defects Mobile Device defects Static test defects due to design changes Defects tagged to the wrong release. Valid defects with a shared root cause. The RCA does not address why so many defects were not detected during System Testing. The goal of UAT is to address the use of the solution by the end users. Design problems or design changes based on JAD sessions should be found in Systems Test, not UAT. DHS cited the lack of ASI experienced SAs and the practice of updating the Functional Design Documents during ST and UAT. May also be root causes. The ASI reported corrective actions are being taken and it is anticipated the Release 0.3 Lessons learned activity may identify further corrective actions. IV&V recommends the ASI conduct a joint (DHS, ASI, IVV) RCA with DHS focused on identifying why defects are not being found in Unit or System Testing.	4/23/21 RAP - The ASI has completed our RCA for the high number of defects that were detected during UAT. We found 3 main causes for the defects encountered during UAT: 1) there were a large number of duplicate defects recorded by testers that were executing the same scripts in the same day; 2) there were a large number of presentation defects that were recorded on mobile devices that were not detected on PC browsers; 3) there were a higher number of static test defects due to design changes that were provided during the review of the BI-30 Functional Design Document rather than in earlier informal review cycles; 4) a number of defects were fixed but the defects were tagged to the wrong release; 5) there were a number of valid defects that were recorded that all shared a single root cause. Additionally, it is worth noting that despite the high numbers of defects detected, that nearly all were closed during the UAT cycle.		
65	DHS BESO staff with expansive business knowledge or availability are needed on the project to ensure business needs are sufficiently captured so that the BES solution is designed to meet the business needs and requirements.	Ryan	Finding - Risk	3/2/2021	Project Management	As the BES system is designed, it appears there is a lack of BESO staff with expansive business knowledge and availability to work on the project to ensure the BES system meets the business need and requirements.	BESO staff with expansive business knowledge and availability are critical to the project to ensure business needs and requirements are effectively documented as the new system is designed and developed.	DHS continue to identify BESO SME's to support the project as the project progresses. DHS develop a project team list that identifies the participants along with their roles and areas of expertise to be used as short-term needs are identified DHS utilize the BI-5 Project Schedule report developed by the ASI to identify those tasks owned by DHS in the short term in addition to the 4-month look-ahead to identify time frames and activities where there is a high-demand on DHS resources. Identify and on-board a replacement BES Project Manager. Continue coaching the new BES Product Owners to ensure the new system takes advantage of new technologies and aligns to the planned business process.	ASAP	3	3	Med	Open	06/30/2021 - In the 06/09/2021 Status Meeting, DHS reported they added a Reports SME and two additional staff to the UAT test team. DHS continue recruiting for the BES PM position. 05/13/2021 - The DHS Product Owners continue to adjust to their new roles to include decision making and designing BES to take advantage of the new technologies. DHS has identified a replacement BES PM, onboarding was delayed and is now planned for June 2021. 04/02/2021 - The DHS Product Owners are adjusting to their new roles to include decision making and designing BES to take advantage of the new technologies. DHS has identified a replacement BES PM, onboarding is planned for May 2021. 03/11/2020 - The DHS Product Owners continue to adjust to their new/revised project role, which is having a positive impact to the BES design. DHS is taking the planned actions to replace the DHS PM. 02/28/2021 - In January, DHS added many BESO staff and is having a positive impact on the project. With the retirement of DHS BES Project Manager (effective 2/26/2021) and Business Analyst (effective March 31, 2021) a transition plan was developed to support the onboarding of a new BES PM. DHS is taking the following actions, DHS developed a DHS BES Resource Pool to support future resource needs on the project. DHS is using a report from the BI-03 Project Schedule focused on the DHS activities and tasks planned to be performed in the next 4 months to provide early visibility to peak DHS resource needs. Additionally, the DHS BESO Administrator spends 2-3 days per week at the ASI onsite facility to review plans, address issues and conduct follow-up as necessary.	4/23/21 RAP - DHS has added a number of product owners to the project over the past few months and given them the authority to make design decisions for the department. This has resulted in improvement in the turn around time for decisions being made.		
63	The lack of early planning and coordination with interface partners may result in schedule delays.	Al Pangelinan	Finding - Risk	1/21/2021	Integration and Interface Management	The following planning and execution items have not yet been addressed and documented by the ASI. Connectivity is planned to utilize a presently undefined ETS API Gateway; however, there is no evidence that details have been determined or documented in this regard. There is little evidence of active and sufficient communication with interface partners for coordination, design, and testing activities (Unit Test, ST, UAT). Interface planning and execution tasks and activities, including those for interface partners, are neither resident nor managed within the Project Schedule. A mitigation plan has not been developed to address the unavailability of interface partners during interface implementation after MOAs have been approved, testing dates have been confirmed, and communications have been frequent.	Interfaces is one of the areas where DOI projects often underestimate the time needed to effectively manage all the tasks and activities to successfully implement data sharing. A clearly defined communication plan and schedule that includes the coordination, planning, and execution activities along with milestone dates may minimize the risk of possible delay. In addition, after planning has been completed, interface partners will have to be available during interface implementation to ensure that the interfaces are properly tested before deploying the system to production.	1. Establish a communication plan for each interface partner for the duration of the BES DOI activities. 2. Define a detailed schedule for each interface to include milestone dates, coordination, and execution and share with the interface partners. 3. Determine which deliverable will include the details associated with the planned connectivity and detailed technical designs of all interfaces. 4. Identify and document all interface partners' contacts. 5. Complete all MOAs and obtain approval. 6. Confirm testing dates with interface partners in writing. 7. Distribute preparation procedures for interface implementation to interface partners. 8. Develop a mitigation plan to address the unavailability of interface Partners during interface implementation	Q4 2021	5	3	High	Open	06/30/2021 - The project team continues to update the interface planning documents. IVV conducted another review of the Communication Plans and found that 11 interface partners' contacts have not been documented. 4 MOAs have not been approved, and testing dates have not been confirmed for 6 of the interfaces. IVV will continue to monitor. 06/27/2021 - The project team continues to update the interface planning documents. However, IVV reviewed the Communication Plans and found that 23 interface partners' contacts have not been documented. 5 MOAs have not been approved, and testing dates have not been confirmed for 21 of the interfaces. IVV will continue to monitor. 05/12/2021 - The project team continues to update the interface planning documents. However, IVV reviewed the Communication Plans and found that 23 interface partners' contacts have not been documented. 14 MOAs have not been approved, and testing dates have not been confirmed for all of the interfaces. IVV raised the critically rating from Medium to High this month due to the status of the communication plans and testing schedule. IV&V will continue to monitor. 04/29/2021 - The ASI has updated the Communication Plans and project schedule regarding interfaces. At the Project Status Meeting on 04/26/2021, the ASI verbally reported that the Release 0.5 interfaces will be fully tested to include application testing with converted data. However, the project schedule does not address meetings with interface partners or interface testing. In addition, IVV has not seen the Test Plan for interface testing. 03/30/2021 - The ASI has incorporated communication plans into the Interface Control Documents (ICD). In addition, the ASI has maintained the Interface MOA and Testing spreadsheet (updated 03/17/2021), which contains the status and dates for each interface. However, there are outstanding MOAs, which need to be established. Overall, the ASI has made improvements regarding the planning and managing of interface activity. IVV lowered the rating from High to Medium. IVV will continue to monitor. 02/28/2021 - The ASI continued interface planning, coordination, and testing activities. The project team continues to update the interface planning documents. 06/28/2021 - No progress to report this reporting period. The CMM/PM team is still unable to measure sprint velocity and there are no story point estimations in the FCM. All backlog velocity is being tracked for the SSP project but they consistently commit to more work than their velocity indicates they can complete in a single sprint. This is a symptom of not using velocity as a planning tool during Sprint Planning. 05/27/2021 - There has been no progress this reporting period. The CMM/PM team is unable to measure sprint velocity. The ASI is working with their subcontractor to make this information available to project leadership. 04/29/2021 - No major update. The CMM/PM team is still unable to measure sprint velocity. As mentioned previously, the team is using JIRA as their task tracking tool but have not implemented the use of metrics which would enable them to track velocity. 03/30/2021 - During this reporting period, IVV observed the shifting of use cases to future releases. This is a result of the inability to use the development team's velocity to plan and forecast work by Sprint and Release. The CMM/PM team migrated to JIRA but it is too early to tell how effectively the tool is being used to track and utilize agile metrics for planning. IVV will continue to monitor the team's progress towards using JIRA to track and utilize agile metrics to accurately plan future work. 02/25/2021 - Velocity is an important metric in Agile development to provide project leadership the ability to forecast the number of iterations needed to complete any remaining work. During this reporting period the subcontractor started to move their Jira cards into Unveiy's instance of Jira. This will support the project's ability to track their velocity in upcoming sprints. IVV retains a high critically rating for this finding due to the impact on the ASI's ability to forecast the delivery date of the CMM/PM modules. We will continue to monitor progress on the use of the tool and documenting story point estimation to track and report velocity. 02/22/2021 - The ASI leadership recognized the importance of tracking their subcontractor's velocity and is working with them to track and provide the required information. ASI will continue to monitor the subcontractor's velocity and will continue to track.	4/23/21 RAP - The interface team has created communication plans for all interfaces. The decision on testing dates will be noted once the project schedule has been updated to reflect the impacts from the ATC. DHS has located additional MOA/ MOU with trading partners in March. There are still that remain outstanding; however, DHS is working through the process of locating those, and we do not expect that the lack of MOU/ MOA will have impact on the project until go-live 02/25/2021. Archo stated that the CYCHA interface is slated for Release 0.6 as one of the BESO interfaces and stated that Archo updated the project schedule to include CYCHA. 02/25/2021 rap - Observation #1 was largely inaccurately reported by the IV&V in January. The ASI provided the details demonstrating that ~90% of the interfaces were in the tracker spreadsheet, BI-11, BI-12, and project schedule. The rest have been remediated. Observation #2: There are some inaccuracies in the observation of the IV&V. The API Gateway was documented in BI-12, there are three primary points of connection for 3rd party interfaces; for existing interfaces that KOLA leverages, the interface point will continue to be the State Hub (DSG which is being migrated to Dell Boomi), for those being leveraged only by BES, the connection point will be Dell Boomi, and the FTI endpoint for the BES interface. We have recently received access to Boomi in a Sandbox and will begin Technical design for this. Communication with the interface partners is tracked in the interface tracker which was enhanced in February to include a communication plan. It will continue to be expanded in the future. As to technical design, the choice to leverage SFTP technologies vs. APIs is based on the capabilities of the partner systems, most of whom will not change their interface processes from file to service. For Observation #3: Constraints and Risks will be updated as appropriate to the ICD's. However, we note that the IV&V is present at walkthroughs of the ICD's and has not suggested specific constraints or risks that are missing as part of walkthroughs either. The ASI has identified interfaces as a risk and is putting together Contingency and Mitigation plans for the risk identified here. We do agree that interfaces are a risk to the project.		
62	Inability to measure development team velocity may impact the project's ability to forecast the delivery date of the remaining features.	John	Finding - Issue	12/28/2020	Project Management	The subcontractor development teams don't currently track and report Sprint velocity to the ASI.	Velocity is an important metric in Agile development which provides project leadership the ability to forecast how many iterations the team will need to complete the remaining work. Development teams use velocity to avoid over-committing to work in future Sprints. Velocity can also be an early indicator that the project needs more time or resources to meet the planned release date. If the ASI does not track development team's velocity, they cannot accurately forecast the delivery date of the remaining features, which may place the project cost and critical path at risk.	IVV recommends the ASI work with the subcontractor Scrum Masters to calculate the average velocity from past iterations to be used as a historical reference. Moving forward, the development teams should provide the ASI with Sprint and Product Burndown charts at the end of every iteration. The Sprint Burndown chart provides the ASI with a visual representation of the planned vs actual work completed for each Sprint and the Product Burndown chart shows the bigger picture. To calculate velocity, user stories need assigned values (IVV recommends relative story points). If the developers are not currently assigning values to user stories, IVV recommends this become common practice.	7	4	4	High	Open	06/28/2021 - No progress to report this reporting period. The CMM/PM team is still unable to measure sprint velocity and there are no story point estimations in the FCM. All backlog velocity is being tracked for the SSP project but they consistently commit to more work than their velocity indicates they can complete in a single sprint. This is a symptom of not using velocity as a planning tool during Sprint Planning. 05/27/2021 - There has been no progress this reporting period. The CMM/PM team is unable to measure sprint velocity. The ASI is working with their subcontractor to make this information available to project leadership. 04/29/2021 - No major update. The CMM/PM team is still unable to measure sprint velocity. As mentioned previously, the team is using JIRA as their task tracking tool but have not implemented the use of metrics which would enable them to track velocity. 03/30/2021 - During this reporting period, IVV observed the shifting of use cases to future releases. This is a result of the inability to use the development team's velocity to plan and forecast work by Sprint and Release. The CMM/PM team migrated to JIRA but it is too early to tell how effectively the tool is being used to track and utilize agile metrics for planning. IVV will continue to monitor the team's progress towards using JIRA to track and utilize agile metrics to accurately plan future work. 02/25/2021 - Velocity is an important metric in Agile development to provide project leadership the ability to forecast the number of iterations needed to complete any remaining work. During this reporting period the subcontractor started to move their Jira cards into Unveiy's instance of Jira. This will support the project's ability to track their velocity in upcoming sprints. IVV retains a high critically rating for this finding due to the impact on the ASI's ability to forecast the delivery date of the CMM/PM modules. We will continue to monitor progress on the use of the tool and documenting story point estimation to track and report velocity. 02/22/2021 - The ASI leadership recognized the importance of tracking their subcontractor's velocity and is working with them to track and provide the required information. ASI will continue to monitor the subcontractor's velocity and will continue to track.	4/23/21 rap - The shifting of use cases in March to future releases had nothing to do with development team velocity. Instead, they were based on the unavailability of resources needed by the design and development team to complete their work. The CMM/PM development team has moved to JIRA but still needs to implement metrics that would be used to track velocity. At this point, however, we have no data that shows that development velocity is a risk. Rather it is activities upstream of development that are impacting development velocity 2/25/21 rap - The reports are available for the SSP team. The CMM/PM team has migrated to JIRA and will continue to make progress toward providing these metrics. The team does provide 6 complete updates on development work. The ASI questions the severity of this risk. According to the IV&V's definition of High, the risk is having a direct impact on the project now and needs to be remediated immediately. This has not proven to be the case over the first 3 releases. Rather we agree that the risk could impact the project and the project should take steps to mitigate the risk. This is more in line with a medium risk according to the IV&V's risk register. 12/31/2020 - Rob said they have that information and will work for consistency. The subcontractor does not have this in their scope of work for a deliverable and expects some pushback from the subcontractor. Rob said they provide 6 complete that is reported to him and is the way their contracts ask for progress.		

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61	Poorly executed JAD and design sessions could lead to inaccurate design and rework.	Brad	Finding - Issue	11/30/2020	System Design	ASI-led Workflow JAD sessions have been held for CMM, with the following concerns being observed: No clear introduction to all participants on the goal of the JAD, overview on the process and the importance of their participation. On many occasions the conversation needed to be driven by leading questions, as expected, but was instead led by business users. Too much pause time when participants did not know the answer to a question; several occasions where complete silence on the call for 30 seconds or more - Lack of thought leadership from the ASI on how workflow could be designed to ease/improve process for client	The CMM Workflow JAD sessions restarted in November. DHS indicated some concern regarding the CMM Workflow JAD sessions, specifically: (1) Do the JAD participants understand how the Case will be managed through workflow? (2) What improvements will be made in the new BES to support the users and clients? Incomplete or unclear JAD sessions with insufficient documentation could lead to a poor design, lacking the details needed to support business requirements, as well as missing opportunities to improve workflow and related system design.	JAD and design sessions should be lead by experienced senior BAs, with goals, objectives and results communicated to all participants. The facilitator should use their expertise to drive discussions through leading questions. The DHS and ASI product owners should actively participate to ensure the system meets the requirements, designed taking advantage of new technology and aligns to the "to be" business process. The ASI should track significant differences in design direction to determine the root cause in an effort to identify these items as early in the SOLC as possible. The Product Owners should have more direct interaction with the development team, proactively seeking collaboration.	ASAP	2	2	Med	Open	11/30/2020	6/8/2021: No JAD or Design Sessions were conducted in this reporting period. However, the ASI provided IVV a brief overview of the proposed process change to conduct design sprints in concert with the project schedule revisions. In addition, the ASI subcontractor added two Systems Analysts, but it is unclear if they have integrated Eligibility experience. 5/20/21: A few cross-section prototype review sessions were held with healthy collaboration between all participants. Product owners raised some concerns, for example the PO's stated the Manage Veterans information screen might not be needed as the information could be captured elsewhere. This is exactly what these sessions are meant to identify and the earlier they are found in the SOLC process the better. IVV will continue to monitor in May. 4/30/2021: This finding title was revised to include design sessions. DHS has noted that some JAD results documents to include documented design decisions have been lost from prior JAD sessions. To move forward, DHS has requested the ASI to facilitate design sessions to ensure the BES is designed to meet the business requirements and take advantage of new technologies. IVV will continue to monitor. 3/31/2021: No JAD sessions were held during the reporting period. IVV will continue to monitor, looking for any negative downstream impacts to the project resulting from poorly executed JADs. 2/28/2021 DHS and IVV observed continued improvement in the February JAD sessions. Specific improvements were JAD preannouncements, facilitation, and execution to ensure all participants understand and agree on the design of the BES solution. IVV will continue to monitor. 1/31/2021: As observed by DHS and IVV the JAD sessions conducted this month were inconsistent. Some showed improvement by conducting post-meeting follow-ups and improved facilitation. However, the JAD for Release 0.5 Eligibility workflow experienced challenges in planning and preparing the participants to ensure the JAD session was productive and focused on the topics that needed to be clarified and/or modified to meet the business requirements. 12/31/2020 - Two JAD sessions held this month	4/23/21 rap - The ASI appreciated the recognition of the from the IVB's that things have improved. At this point, we have no actionable data that validates this concern. We will continue to monitor the performance of design sessions 2/25/21 rap - The ASI was not able to confirm the IVB's assessment of the January meeting in discussions with project stakeholders. The ASI at this point considers this feedback at this point to be highly colored by observational bias. The ASI would need more actionable detail in order to take action on this Concern.
60	System integration of the BES Modules (CMM, FMM, SSP) will be developed in the later releases as a continuous integrative model within each release which may cause schedule delays.	John	Finding - Risk	9/30/2020	Integration and Interface Management	The BES Modules (CMM, FMM, SSP) are developed by separate teams and demo's are conducted separately with each release. Integration points between the modules are currently stubbed and the ASI has yet to demonstrate integration of the modules and end-to-end functionality.	System integration has historically followed a 'big bang' model where all system components arrive simultaneously usually towards the end of the project resulting in a flawed and immature delivery. In theory, integration is expected to occur instantaneously. In reality, a 'big bang' integration strategy results in a rushed and incomplete system test process and a system that is focused on individual components rather than system capabilities.	1/27/2021: IVV recommends prioritizing the build of integration points within each module and the creation of scripts (API calls) required for integration. Each release demo should be a collaborative effort across all modules (end-to-end system-level), demonstrating the understanding of every integration point and verified against system-level requirements. If the ASI needs all the remaining releases to demonstrate an end-to-end solution of the identified business processes across all modules, IVV recommends planning and communicating the mitigation strategy for handling risks associated with a 'big bang' release.	N/A	4	4	High	Open	06/28/2021: This reporting period, IVV reviewed the SSP integrations document in Confluence that outlines the integration approaches for the identified SSP integration points. The document was designed as a reference for developers and contains the expected low-level details (API calls, request/response). To prepare for future knowledge transfer, it should include high-level information (specific module names associated with each integration point). The SSP integration document will continue to evolve and is a positive step towards the mitigation of this risk. 06/17/2021: The ASI provided IVV with a timeline for the planned integration of the BES modules. Integration between SSP and BES modules is planned to start in Release 0.3 and will continue through the final release. The plan is to integrate applications first, then appointments, alerts, notifications, and cases, etc. This risk will remain until there is demonstration of end-to-end functionality across modules. 04/29/2021: Agile Best Practice is to deliver business value through the early development of technical solutions with end-to-end business processes. The ASI is building modules of the application separately and integrating them in later releases to satisfy the end-to-end business processes. This risk will remain until there is demonstration of end-to-end functionality across modules. 03/26/2021: NDM integrations are currently being worked and CIA integrations are planned to be complete by the end of the next reporting period. IVV will continue to track the progress of the integration of modules and the prioritization of building integration points. 02/25/2021: No major updates in this reporting period. Recommendations stand as written. 01/27/2021: During this reporting period, IVV gained further insight regarding the system architecture and planned integration strategy for each module. The ASI considers each module a contained application, using services to integrate with other modules. While this does not change the risk to the project, IVV has updated our recommendations to reflect our new understanding of the plan for integrating modules. 11/29/2020: No major progress was observed this reporting period.	4/23/21 RAP - The ASI SSP team has developed integration stubs for application submission from SSP to the CMM system. The stubs are included as part of R0.4 sSR release. The corresponding consumption of the application data will be included in future releases. Additionally, the CMM/FMM team is developing an interface framework for incorporating interfaces that are part of R0.4 and R0.3. The team has had to postpone a number of integration points for reasons beyond the control of the ASI. Additionally, the recommendation that demonstrations be done end to end is not workable presently for internal integration points because they would demand that the application be built sequentially rather than independently. In later releases, this will be possible. 2/25/21 rap - The ASI had planned integration in R0.2, R0.3, and R0.4 with 3rd party tools. None of these integrations were able to be completed based on circumstances beyond the control of the ASI. The ASI also notes that the development and integration plans was published in July 2020 and that the IVB's did not raise this concern until October until it was basically too late for the ASI to respond to this risk. The ASI has published API plans for the SSP in February.	
58	The Data Conversion effort lacks leadership, consistency in Data Governance, and effective communications which may impact the schedule.	Brad	Finding - Risk	9/30/2020	Project Management	The Data Conversion effort appears to lack leadership for both the ASI and DHS. IVV has become aware that while DHS used a Data Governance Workgroup for the NDM release, it has not been active since and has not been formalized for DHS. Last, the project does not have a Data Conversion team assigned to lead the project. DHS has stated that the ASI should lead this effort and communicate with DHS where they are needed to assist. Multiple data cleanup actions and decisions between the ASI and DHS have lagged for several weeks, with the lack of leadership and communication suspected as the root cause. As example, it was announced in mid-month that the R0.2 data conversion effort would not result in actual conversion of data, and that the validation for R0.2 would be limited to being "done on paper". DHS was unaware that the ASI had a plan that did not include actually converting data. IVV will continue to monitor.	Data Conversion is often considered as one of the longest and most complex tasks in a DDO project. The lack of a Project Conversion Lead, coupled with communication challenges on tasks, activities, and decisions can, and already has, led to schedule delays.	- Assign a dedicated project leader to actively manage all aspects of the Data Conversion effort. Consider a full time position until the Data Conversion effort is completed. - Investigate and resolve communication issues that are suspected to be delaying the data conversion effort. - Prioritize the conversion activities to validate the key tasks are addressed early to avoid further delays considering the complexity of the later releases. - Update the timing of the project Data Conversion meeting from every other week to weekly. - The ASI should develop reports with metrics that accurately measure the Data Conversion progress. - Add detailed Conversion tasks to the Project Schedule. - The DHS Data Governance committee needs to clarify the usage of MOM to the BES conversion team aligns to the planned governance structure.	04/30/2020	3	2	Med	Open	4/26/2021: The ASI and DHS continue tactical work related to data conversion progress. The current schedule does include Data Conversion tasks however, it is unclear when converted data will be used to conduct SIT and UAT testing activities. The data conversion team is now providing a weekly status update and updating confluence with the project documents along with key metrics to accurately measure and report data conversion progress. 12/30/2020: IVV observed the Data Conversion team (ASI/DHS) completing very specific tasks related to data cleansing and validating conversion plans. However, the ASI has yet to develop the "big picture" of the data conversion activities - a high-level activity chart from start to finish. 04/30/2021: IVV continues to observe improved working processes and communications across the data conversion team. However, data conversion tasks should be added to the schedule in current and future releases - including SIT and UAT testing. IVV remains concerned and will continue to review the schedule and metrics when provided by the ASI. 03/31/2021: CIT and IVV have been invited to more of the ongoing meetings and have been included in communications between ASI and DHS on conversion tasks, greatly increasing visibility to progress in this workstream. Prior to these changes, high level status was shared every two weeks on the status call - making it very difficult to gauge progress. IVV will continue to monitor. 02/26/2021: Release 0.4 Data Conversion continued during February and is scheduled for completion in mid-April. However, the ASI reported that functionality and release timing changes being considered for the CMM interview processes may impact data conversion. The project team has discussed changing the frequency of the Project's Data Conversion meeting from every other week to weekly for more frequent and consistent communication updates of detailed tasks and activities. IVV supports this as being beneficial to the project. Based on the importance of data conversion to the overall project, IVV is raising the criticality rating of this finding	4/23/21 RAP - The ASI agrees that the conversion is often a high risk area for projects of this size and scope. We agree and plan to add metrics based reports for the Data Conversion process in the next reporting period. We have also prioritized the key conversion tasks that can be completed at this point. We recommend based on the IVB's status updates that they reconsider recommendation #4 regarding meeting frequency 2/25/21 rap - DHS has added new staffing to the conversion team which has helped move the conversion effort more effectively. The ASI has added a full time resource to manage conversion with the support of a project manager/ controller as well. #2, The new DHS staffing model appears to have resolved this issue from the ASI perspective. If the IVB's has additional details regarding ASI participation that are more actionable, we would appreciate the feedback. #3, This was already part of the ASI's conversion plan, would appreciate more actionable feedback. If IVB's believes this is not complete, #4, The ASI agrees with this recommendation and has requested the conversion team improve this starting.	
54	User Acceptance Testing (UAT) processes and timing of inputs required for UAT could lead to implementation delays and delivery of a solution that does not meet business needs or requirements.	Brad	Finding - Risk	6/24/2020	Project Management	11/30/2020 - Applications changes applied in UAT need to be reflected in update BI-10. Poorly planned and executed User Acceptance Testing (UAT) could lead to implementation delays and delivery of a solution that may not meet business needs. During this reporting period, UAT was initiated. However, several deliverables that support the UAT process were not provided and/or approved prior to UAT, which impacted DHS' ability to proceed with testing. Outstanding predecessor deliverables include: Approval of system test scripts (BI-20) Delivery and approval of system test results (BI-22) Delivery and approval of other RLI deliverables (BI-10, BI-14, BI-15, BI-23). The ASI plans to address this challenge, as well as other opportunities for improvement evidenced during R8 Q1 as 'lessons learned' during future releases. IVV notes that DHS staff will be required to enter UAT test scripts into pre-defined spreadsheets, which will be imported into Jira by the ASI. DHS staff will be directed directly into Jira, which may necessitate a deeper level of training for use of the toolset, in addition to the demonstration previously provided by the ASI.	UAT gives DHS the chance to test the BES release using both real-world examples and those people who will be using the application day to day. It is the final stage of the implementation process conducted to ensure that system requirements meet business needs and allowing for any issues to be fixed before the system goes live. A UAT that is not comprehensive could result in defects being found post go-live, leading to expensive solution updates and reduction of user confidence in the solution.	- All agreed upon actions to resolve issues called out in Release 0.2 Lessons learned should be added to project schedule so adequate timing is provided to support UAT preparation and execution. - Further develop the action plans to include target completion dates. - Report progress in the weekly status meeting. - The ASI could conduct a debrief meeting with DHS after SIT and UAT have completed, summarizing work completed and follow-up actions required from ASI and DHS. - Develop a clear and collaborative approach on plans to review and categorize all defects after testing if the current defined process is not being followed. This should include joint (ASI/DHS) severity level assignments for defects and determining the next steps for defects that require a change to the F2U or other previously approved or drafted deliverables. Evaluate the process and schedule to determine if adjustments could streamline the process for the UAT test team to plan and create UAT test cases, minimizing rework. - Design needs to be solidified prior to developing the scripts - should establish a cut-off date for the design.	Immediately	3	1	Med	Open	04/30/2021: Release 0.4 UAT began on June 28th and the results of the Release 0.3 6/30/2020 - RP - Met w/ GH. Acknowledge that the first release is late. Discussed the pre-req deliverables, and the need to start testing. Early drafts for deliverables being circulated for review. DHS does not want to enter UAT test cases into Jira, will populate spreadsheets and provide the ASI for import into Jira. SIT under discussion for adding defects into Jira, working towards agreement. PO: DHS Test Lead will triage defects, and DHS WILL add defects into Jira. ASI concern of just one person handling this responsibility to help avoid bottlenecks. None are currently anticipated on ASI side. Project schedule will be re-aligned to ensure that predecessors are completed prior to UAT. Per RP, this may be left to ASI delivery, not DHS acceptance. Schedule updates expected by next week. Process for potential exception for deliverable approval has not yet been determined. 05/30/2021: There were no active UAT sessions during this reporting period. However, DHS indicated that in Release 0.3, the solution design was being updated after UAT start, causing rework on test cases/script creation. This may be addressed in the Release 0.3 Lessons learned activity, planned for next month. 04/30/2021: In discussion with DHS, during Release 0.3 UAT, Functional Design Documents (FDDs) were being updated during SIT, making it very difficult for the UAT test team to create accurate and complete test cases. IVV will continue to monitor. 03/31/2021: UAT for release 0.3 is now in progress and continues to be facilitated and executed well. New metrics have been introduced which help clarify progress and focus areas. IVV will continue to monitor. 2/28/2021: In February, the ASI developed a process to manage updates to the BES Design Documents based on the outcome of UAT that are not categorized as defects but should be included in the BES design. Additionally, the majority of Release 0.2 Lessons learned were implemented in February. IVV reduced the criticality rating of this finding from medium to low and will monitor the execution of these new processes in March. 01/26/2021: There were not any UAT activity in January however, the 44 design changes identified during Release 0.2 remain outstanding along with the Release 0.2 BI-10 changes identified during UAT. IVV has not seen the plan to resolve these items to include identification of the downstream impact to the follow-on releases to development, testing, and UAT. 12/31/2020: There was not any UAT activity in December however, the 44 design changes identified during Release 0.2 remain outstanding. IVV has not	4/23/21 RAP - During this period, UAT for R0.3 completed. We will implement recommendation #3 by the end of the review period. Recommendation #4 to review and categorize "anomalous" reported from UAT is complete. The use of this term rather than industry-specific terminology by the IVB's hints at a value judgement on the definition of a defect. During this period, the ASI met with DHS project leadership and reviewed the process for managing both defects when the system does not behave as designed and enhancements (a request to change the design) relayed by the testing team. The team agreed on both the terminology and the process for managing both defects and enhancements. We request that the IVB's respect that decision and update language in their reports accordingly 2/25/21 rap - The UAT for R0.2 was successful based on inputs from those stakeholders involved in the process especially around the specific language identified in the risk. The UAT training and execution was well planned and well executed. We credit DHS adding a UAT team that works closely day in and day out with the ASI testing team with this success. Regarding the specific recommendations, all lesson learned action plans for R0.2 are documented in Confluence with actual target dates. Progress has been reported throughout January and February at weekly status meetings and at Release update meetings. All lessons learned for R0.1 are complete or have been incorporated in the R0.2 action plan. Regarding recommendation #2, the lessons learned plans are documented in Confluence, documenting in the project schedule would be duplicative and is unnecessary from the ASI's point of view. The team in February completed nearly all action plans for R0.2 based on the plans outlined in Confluence. Few of any of the lessons learned in R0.2 were directly related to UAT planning and execution. Rather they were upstream activities. Regarding Recommendation #3, the ASI agrees with this recommendation. The debrief meeting from SIT was completed for R0.2 as part of the UAT go/no-go meeting. I will again for R0.2. We will conduct a final briefing meeting after R0.2 UAT in March/early April. Regarding Recommendation #4, in February, the ASI and DHS collaborated on a revised testing plan that clearly outlines defect categorization and management. Severity of defects is defined in the RFP and was published in R0.3 in the original accepted deliverable. It has not changed. The UAT process will identify enhancements to the current design that is expected and a good thing for the	



