Josh Green, M.D.
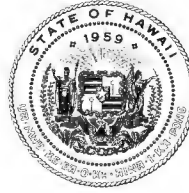GOVERNOR

DOUGLAS MURDOCK
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March 22, 2024

The Honorable Ronald D. Kouchi
President of the Senate
  and Members of the Senate
Thirty-Second State Legislature
State Capitol, Room 409
Honolulu, Hawai'i 96813

The Honorable Scott K. Saiki
Speaker and Members of the
  House of Representatives
Thirty-Second State Legislature
State Capitol, Room 431
Honolulu, Hawai'i 96813

Aloha Senate 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 report the Office of Enterprise Technology Services received for the State of Hawai'i, 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 (Mar 22, 2024 15:22 HST)

Douglas Murdock
Chief Information Officer
State of Hawai'i

Attachments (2)

Hawaii Department of Human Services Systems Modernization Project

Final IV&V Status Report
for Reporting Period: January 1 – 31, 2024

*Submitted: February **14, 2024***

PUBLIC CONSULTING GROUP

Solutions that Matter

Overview

Executive Summary

Executive Summary

In January, the System Integration Testing (SIT) Phase was delayed to accommodate additional development sprints and avoid an overlap of Development and Integration Testing (INT) testing phases. Taken in combination with other factors that are causing delays, the Project moved from "Green" to "Red" during this reporting period.

To course correct, the ASI is developing a "Go-to-Green" Action Plan for DHS and IV&V review to validate that the root causes of the delays are fully understood and addressed.

Throughout these events, DHS and ASI Leadership continue to collaboratively manage the Project to achieve a solution that meets the core requirements.

Nov	Dec	Jan	Category	IV&V Observations
M	M	H	Project Management	Corrective actions taken by the ASI in early January did not address the project schedule challenges. Ongoing development has resulted in additional delays and the late August BES Go-live date is at risk. As a result, this category was raised to "High" during this reporting period.
M	M	M	System Design	Two Sprint demos delivered in January led to defects identified by DHS. These, along with other defects, require rework and impacts the ASI's ability to conduct future demos. Further rework may be required as DHS' review of the outstanding Epics continues.

Executive Summary

Nov	Dec	Jan	Category	IV&V Observations
M	M	M	Configuration and Development	Adding sprints for development and INT has impacted downstream activities. IV&V remains concerned that the full development effort to complete BES is unknown and may lead to additional delays.
M	M	H	Integration and Interface Management	Although the interface agreements were completed between DHS and its partners, delays in getting the agreements in place resulted in delays to interface designs, development, and testing, which is impacting the schedule.
H	H	H	Testing	Corrective actions taken to avoid an overlap between development and INT with SIT were not realized and the Project is now reporting further delays. SIT is on hold until a yet-to-be-determined date. The development of SIT test scripts is ongoing.
H	H	H	Security and Privacy	The DHS Security lead is developing the outstanding documentation that supports the System Security Plan (SSP), while the ASI continues work on the secure enclave. IV&V remains concerned with the amount of outstanding work to complete these activities and the impact on the Independent Security Controls Assessment of BES.

IV&V Findings and Recommendations

IV&V Findings and Recommendations

As of the January 2024 reporting period, PCG is tracking 11 open findings (6 risks, 5 issues) and has retired a total of 73 findings. Of the 11 open findings, 4 are High, 5 are Medium, and 2 are Low.

Open Risks & Issues

Legend:
- Open - Med
- Open - Low
- Open - High
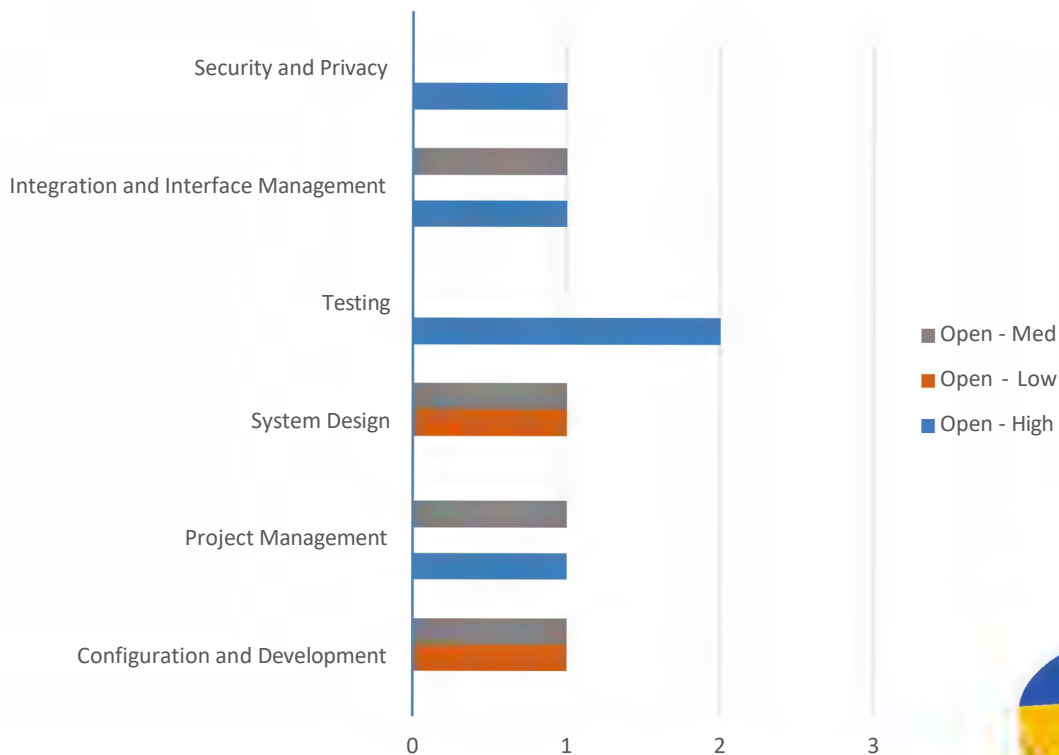
Open Risks & Issues by Category

Legend:
- Configuration and Development
- Project Management
- System Design
- Testing
- Integration and Interface Management
- Security and Privacy
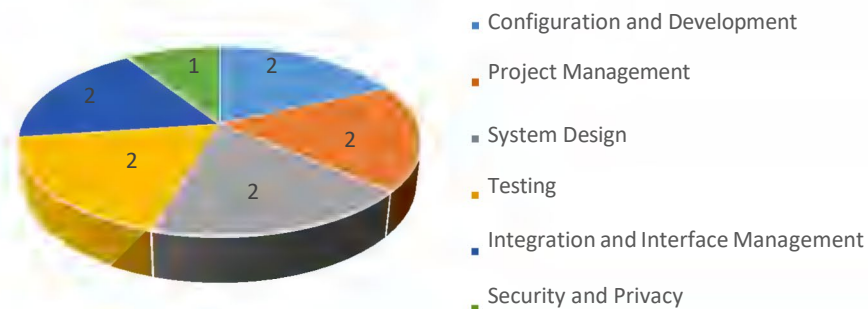
IV&V Findings and Recommendations

The following figure provides a breakdown of the 84 IV&V findings (positive, risks, issues, concerns) by status (open, retired).
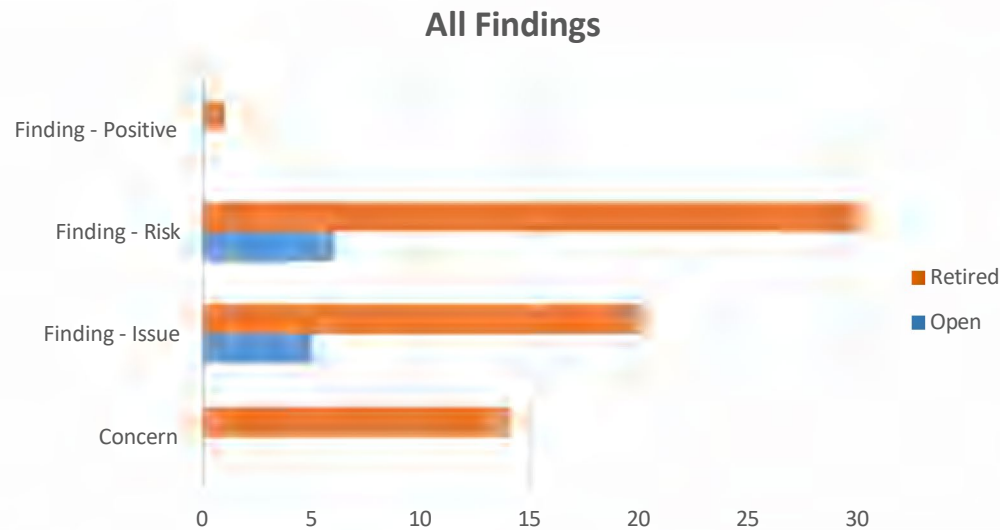
All Findings

IV&V Findings and Recommendations

Findings Retired During the Reporting Period

#	Finding	Category
91	**Preliminary Concern – Transitioning KOLEA M&O activities to a new vendor may cause delays for the BES go-live and/or the delivery of critical features.** DHS confirmed that they are comfortable with the new KOLEA M&O vendor as they have been a reliable vendor in the past for DHS. The ASI is also confident in the KOLEA transition to this vendor. Based on the DHS and ASI feedback, IV&V is retiring this preliminary concern.	Pilot Test Deployment
67	**Risk - The Americans With Disabilities Act (ADA) Section 508 compliance tool has not been installed timely for the Project, which may cause significant rework.** Since the ASI installed the Usablenet tool, established 60 User Journeys to review BES for compliance, and is reporting ADA compliance progress, IV&V is retiring this finding. IV&V will continue to monitor ADA testing for any potential risks or issues.	Testing

IV&V Findings and Recommendations

Preliminary Concerns Investigated During the Reporting Period

#	Finding	Category
	None	

IV&V Findings and Recommendations

Findings Opened During the Reporting Period

#	Finding	Category
	None	

IV&V Findings and Recommendations

Project Management

#	Key Findings	Criticality Rating
74	**Issue – A BES Project schedule based on inaccurate estimations diminishes effective planning and resource management, which could result in late deliverables, cost increases, and a late go-live.** At the start of January, a 4-week schedule delay to SIT was reported by the ASI to avoid an overlap of INT and SIT. On January 31, 2024, the ASI reported that SIT would not start as planned. The project status report indicated "Red" in most categories and the ASI reported they were developing a Go-to-Green Plan. Further delays may be imminent. IV&V has raised the criticality rating of this finding to "High".	H

Recommendations	Progress
• Monitor, evaluate and revise scheduling estimates for accuracy.	In Process
• ASI provide details on how Velocity measures were used to develop estimations for development effort in new version of DDI schedule	Incomplete
• ASI conduct a Root Cause Analysis (RCA) with DHS and IV&V to determine why the BES Project Schedule continues to be impacted by unanticipated work.	Not Started

IV&V Findings and Recommendations

Project Management

#	Key Findings	Criticality Rating
	Risk – Implementing a Core Solution for go-live carries inherent risks that may impact overall project success and reduce user adoption.	
88	The ASI recently transitioned the OCM leadership role to a new resource. OCM activities will be crucial in reducing the risk associated with implementing the Core Solution and effectively managing user, public, and legislative expectations. The effect of this transition is unclear to IV&V.	M

Recommendations	Progress
• Increase OCM efforts to effectively manage user, general public, and legislative expectations for BES version at go-live.	In process
• Prioritize feedback from users and FNS to ensure the solution meets their core needs and so users are clear on what features they are, and are not, getting.	In process
• Actively monitor, assess, and address potential challenges throughout the development process including code quality, cutting scope to meet development milestones, insufficient user validation of demonstrated functionality, and fully defined workarounds to accommodate for the missing functionality.	In process
• DHS carefully assesses whether the advantages of a timely release outweigh the advantages of going live with a system that provides more comprehensive functionality, requires fewer workarounds, and increases user satisfaction.	In process

IV&V Findings and Recommendations

Integration and Interface Management

#	Key Findings	Criticality Rating
90	**Risk – Changes required to incorporate the Federal Tax Offset Program (TOP) interface within the Secure Enclave may not occur before the BES Pilot.** Due to the unanticipated classification of FNS TOP data as Federal Tax Information (FTI), data collection and retention must be redesigned and placed in the Secure Enclave. This modification cannot be completed before FAT testing, currently planned for March 1, 2024, placing the incorporation of this functionality into the Pilot at risk.	M

Recommendations	Progress
• Complete the interface functional redesign to utilize the Secure Enclave.	In process
• Modify existing TOP test plans to validate the proper handling of FTI information and integration to the balance of the BES system.	In process
• Work with FNS and IRS regarding the timeline for having TOP data and the tax offset functionality available to BES System users.	In process
• Once the new design is complete, estimate the Level of Effort and tasks/activities required through implementation to provide the Project Management Team with options as Pilot planning/activities are underway.	In process

IV&V Findings and Recommendations

Integration and Interface Management

#	Key Findings	Criticality Rating
63	**Issue – The lack of early planning and coordination with interface partners may result in schedule delays.** The final two MOA/MOUs were signed. Interface development is behind schedule and will require workarounds when FAT begins. The ASI faces challenges with interface partners that lack test environments. The interface testing team has not scheduled meetings, nor published test plans and schedules to coordinate with the interface partners.	H

Recommendations	Progress
• DHS to complete all MOAs and obtain approval.	Complete
• Confirm testing dates with interface partners in writing.	In process
• Complete early proof of concept interfaces to avoid unexpected delays due to external organization miscommunications or their own internal delays in assisting the BES project.	Not started

IV&V Findings and Recommendations

Configuration and Development

#	Key Findings	Criticality Rating
70	**Risk – Insufficient configuration management could lead to development confusion and reduce the effectiveness of defect resolution.** No material update in the reporting period.	Ⓛ

Recommendations	Progress
• ASI adhere to plans for configuration management as documented in BI-6 DDI Plan, Section 5.2 and clarify details and/or any changes with DHS.	In process
• ASI validate plans for configuration management with DHS and agree on a meaningful set of configuration items or settings they will track.	In process
• DHS and ASI work to clarify/solidify plans for the potential use of configuration management tools and DHS work to fund and procure a CM tool, as required, to avoid any negative impacts to the project.	In process

IV&V Findings and Recommendations

Configuration and Development

#	Key Findings	Criticality Rating
80	**Risk – Development delays could negatively impact the project schedule and delay go-live.** Ongoing development delays are still affecting the Project, requiring additional development and INT Sprints and postponing Sprint and Epic demos. To keep the planned go-live date the project elected to overlap INT and SIT, but this is subject to the Go-to-Green Plan that the ASI announced at the end of January.	M

Recommendations	Progress
• ASI effectively track and regularly provide DHS (potentially via the weekly DDI status meeting) with an accurate velocity (e.g., story points per day/week/month) and assure that the current velocity is accurately and consistently reflected in the project schedule.	In process
• The ASI should provide DHS with the time needed to effectively evaluate the software demonstrations (demos) and elicit productive design discussions with DHS attendees during each demo.	In process
• ASI regularly reports estimated story points for the total remaining project work to reach go-live and presents a dynamic burn-down chart to track the progress.	Not started

IV&V Findings and Recommendations

System Design

#	Key Findings	Criticality Rating
73	**Risk – The planned BES infrastructure is complex which could be difficult to implement and maintain and could lead to schedule/cost impacts.** No material update in the reporting period. IV&V continues to monitor this finding.	L

Recommendations	Progress
• ASI develop a process to closely monitor cloud and other product changes (software updates/new releases), manage changes, and regression test once updates are applied.	In process
• The project team work to establish strong governance over the utilization and maintenance of various tools/components.	In process
• ASI allot time in the schedule to conduct proof of concepts to assure infrastructure components work as expected.	In process
• ASI maintain a detailed schedule for DevOps implementation tasks to avoid unexpected delays that could delay project milestones and the critical path.	In process

IV&V Findings and Recommendations

System Design

#	Key Findings	Criticality Rating
86	**Issue – Limited collaboration between the ASI and DHS in the design process could lead to BES usability issues and functionality gaps in the application and not meeting critical business needs for DHS and State clients.** DHS viewed Sprint demos for Epics 247 and 284 on January 9, 2024, where several concerns/issues were raised, resulting in necessary bug fixes. User experience issues that should have been raised during the sprint demos were brought up during the Epic Demo for Epic 240 (repayment agreements), that the ASI is not considering at this time. As of the end of January, the ASI was developing a Go-to-Green Plan to mitigate several delays, including demos.	M

Recommendations	Progress
• Include a wide enough audience in all design and demo sessions to validate FNS and DHS functional and technical requirements and system usability.	In Process
• Perform Sprint and Epic demos in alignment with development Sprint completion (demo functionality/requirements as they are developed) to get early feedback on work products.	Not Started
• Perform comprehensive (demo all requirements) review during Epic demos, not just the items that were added/updated, allowing DHS to provide early feedback on possible issues/gaps that might not be apparent when focusing on specific functionality.	In Process
• ASI and DHS re-evaluate the effectiveness of the recorded Sprint review process to ensure that designs align with DHS expectations.	In Process

IV&V Findings and Recommendations

Testing

#	Key Findings	Criticality Rating
83	**Issue – Gaps in test coverage and slower-than-expected progress in testing may result in schedule delays if subsequent test phases uncover a higher volume of defects and user feedback than initially anticipated.** Due to development delays and testing defects, entry into SIT has been delayed to an undetermined date. Approved and final SIT test scripts remain incomplete for twenty-five Epics. With the lack of a complete SIT script package before the SIT Go/No-go decision, the risk of introducing gaps in test coverage in SIT remains.	H

Recommendations	Progress
• Monitor INT/SIT closely for both breadth and depth of testing to ensure the system is adequately tested.	In process
• The project team reviews the SIT Entry and Exit criteria and revises them as needed to ensure UAT/FAT begins with the best system possible.	In process
• ASI should determine the root cause of the failure to identify simple defects in INT and SIT and implement effective improvement processes to confirm early testing is adequate before entering UAT/FAT	In process

IV&V Findings and Recommendations

Testing

#	Key Findings	Criticality Rating
89	**Issue – The current mitigation approach to complete the development of the remaining R0.12 Epics is condensed and aggressive and may increase the likelihood of schedule delays, quality issues, and a higher volume of testing defects.** To mitigate the INT and SIT overlap and incomplete SIT test scripts, the ASI moved the start of SIT to February 2nd, with "Informal" SIT continuing in January. Despite this attempt, continued development delays and code quality issues led to adding 2 integration testing sprints, further extending integration testing. Additionally, on January 31, 2024, the ASI announced the delay of the February 2nd SIT entry date and stated that a new mitigation approach to meet the August Go-Live date was under development. IV&V has updated this finding to an "Issue" and the Criticality Rating to 'High'.	H

Recommendations	Progress
• Develop Contingency Plans if the mitigation plan continues to see slippage affecting INT and SIT.	In process
• The ASI provides comprehensive INT results and SIT scenarios for incomplete Epics to DHS for review/approval ahead of SIT execution.	In process
• The ASI release a detailed schedule of events, including development completion, INT start, SIT start for each epic covered in the mitigation plan.	In process
• The ASI should evaluate if Epics entering SIT late might require retesting functionality that had already been tested	In process

IV&V Findings and Recommendations

Security and Privacy

#	Key Findings	Criticality Rating
82	**Risk – The lack of technical documentation may lead to incorrect implementation statements or delay the System Security Plan (SSP).** The DHS and ASI security teams continue to work on the secure enclave and documentation that supports the SSP. Documents scheduled for completion by 1/31/24 include the secure enclave SSP additions, Incident Response Plan (IRP), Privacy Impact Analysis (PIA), Configuration Management Plan, and Continuous Monitoring Plan. Other procedural documents will be completed by the end of February 2024. As the Independent Security Controls Assessment is dependent on the completion of some of these documents and artifacts, incomplete documentation may result in assessment findings. Early in January, the ASI reported a working production environment would be available on February 5th for the Independent Security Controls Assessment of BES.	H

Recommendations	Progress
• Determine when the infrastructure design baseline will be completed.	In process
• Determine when documentation will be created, updated, and available for the SSP authors.	In process
• Collaborate and communicate with SSP authors about when reliable and correct documentation will be available.	In process
• Perform a full review of all SSP controls for content and accuracy that have been written as drafts prior to the start of the Independent Security Controls Assessment of BES and submission of the SSP package to federal regulators. This will allow the SSP authors to update controls with changes from Design through Implementation.	In process

IV&V Status

IV&V Engagement Status

IV&V Engagement Area	Nov	Dec	Jan	Comments
IV&V Budget	🟢	🟢	🟢	
IV&V Schedule	🟢	🟢	🟢	DHS and PCG are discussing the extension of the IV&V contract that currently ends in April 2024.
IV&V Deliverables	🟢	🟢	🟢	PCG submitted the final December IV&V Monthly Status Report.
IV&V Staffing	🟢	🟢	🟢	
IV&V Scope	🟢	🟢	🟢	PCG submitted a statement of work to DHS for an Independent Security Controls Assessment of BES.

Engagement Status 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

- IV&V activities in the January reporting period:
    - Completed – December Monthly Status Report
    - Ongoing – Review the BES Project Artifacts and Deliverables
    - Ongoing – Attend BES Project meetings, (see Additional Inputs pages for details)
    - Reviewed available ASI contracts and contract amendments documentation

- Planned IV&V activities for the February 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 Security 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 Bi-Weekly DHS and IV&V Touch Base meetings
    - Ongoing – Review BES artifacts and deliverables

Deliverables Reviewed

Deliverable Name	Deliverable Date	Version
BI-5 Project Schedule - BES 2023 Primary	01/03/2024, 01/10/2024, 01/17/2024, 01/24/2024, 01/31/2024	N/A
BI-5 Project Schedule - BES 2023 DDI	01/03/2024, 01/10/2024, 01/17/2024, 01/24/2024, 01/31/2024	N/A
BI-29 DED	1/26/2024	N/A

Additional Inputs – Artifacts

Artifact Name	Artifact Date	Version
BES 2023 Design Kanban board	N/A	N/A
FNS Handbook 901	01/2020	V2.4
NIST Special Publication 800-53 Security and Privacy Controls for Information Systems and Organizations	12/20/2020	Rev.5
SNAP_System_Integrity_Review_Tool	Sept 2022	N/A
Interface Dashboard – Confluence page	N/A	N/A
BES 2023 Implementation Planning – Confluence page	N/A	N/A
R0.12 Epic Assignment	N/A	N/A
UAT Testing Dashboard	N/A	N/A
R0.12 Epic and Sprint Demo Recordings	N/A	N/A
ADA dashboard	N/A	N/A

Additional Inputs

Meetings and/or Sessions Attended/Observed:

1. V&V Team Meeting – 1/5/2024, 1/8/2024, 1/11/2024, 1/16/2024, 1/22/2024, 1/23/2024, 1/25/2024, 1/29/2024
2. V&V September 2023 Pre-Draft MSR Findings Review – 1/9/2024
3. HI DHS BES September Draft IV&V Report Review – 1/12/2024
4. Bi-Weekly DHS and IV&V Touch Base – 1/9/2024, 1/23/2024
5. Weekly BES Infrastructure meeting – 1/5/2024, 1/12/2024, 1/19/2024, 1/26/2024
6. DHS/IVV Check-in – 1/4/2024, 1/18/2024
7. Weekly Client BES 2023 Project Status Meeting – 1/3/2024, 1/10/2024, 1/17/2024, 1/24/2024, 1/31/2024
8. Security Touchpoint – 1/10/2024, 1/17/2024, 1/24/2024
9. Weekly Data Conversion Workgroup – 1/4/2024, 1/11/2024, 1/16/2024, 1/25/2024
10. PMO End of Day Huddle – 1/25/2024
11. Sprint demo watch party for Epics 247 Correspondence and 284 Renewal & SMRF – 1/9/2024
12. (External) Weekly Interfaces Touchpoint – 1/8/2024, 1/22/2024, 1/29/2024
13. (External) Readiness - Working Group Meeting – 1/2/2024, 1/9/2024, 1/16/2024, 1/23/2024, 1/30/2024
14. (External) Bi-Weekly Client BES 2023 Schedule Review/Status – 1/3/2024, 1/17/2024, 1/31/2024
15. (External) Bi-weekly BES CCB Meeting – 1/10/2024, 1/24/2024
16. (External) BES: FNS Connect – 1/4/2024, 1/11/2024
17. (External) BI-26 Training Course Catalog Response Review Meeting– 1/8/2024
18. (External - Pre-design) TANF Data Extract - Epic 209 – 1/31/2024
19. (External) FAT Kick-Off Meeting – 1/18/2024
20. FAT Touchpoint Meeting with IM – 1/31/2024
21. (External - Epic Demo) Epic 240 Repayment Agreements – 1/26/2024
22. (External) BES M&O Requirements Mapping Review Meeting – 1/26/2024
23. (External - Pre-design) TANF Data Extract - Epic 209 – 1/10/2024

Appendices

Appendix A – IV&V Criticality Ratings

Criticality Rating	Definition
H	A high rating is assigned if there is a possibility of substantial impact to product quality, scope, cost, or schedule. A major disruption is likely, and the consequences would be unacceptable. A different approach is required. Mitigation strategies should be evaluated and acted upon immediately.
M	A medium rating is assigned if there is a possibility of moderate impact to product quality, scope, cost, or schedule. Some disruption is likely, and a different approach may be required. Mitigation strategies should be evaluated and implemented as soon as feasible.
L	A low rating is assigned if there is a possibility of slight impact to product quality, scope, cost, or schedule. Minimal disruption is likely, and some oversight is most likely needed to ensure that the risk remains low. Mitigation strategies should be considered for implementation when possible.

Appendix B – Findings Log

- 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

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
- Requirements Analysis & Management
- System Design
- Configuration and Development
- Integration and Interface Management

- Security and Privacy
- Testing
- OCM and Knowledge Transfer
- Pilot Test Deployment
- Deployment

Solutions that Motter

ID	Title	Reporter	Finding Type	Identified Date	Category	Observation	Significance	Recommendation	Event Horizon	Impact	Probability	Analyst Priority	Finding Status	Status Update	Client Comments	Vendor Comments
90	As a result of the transition of the Federal Tax Offset Program (TOP) interface into the Secure Enclave, new interface design and implementations are required, likely resulting in missing functionality during FAT testing and Pilot releases.	Reynolds, Mark	Finding - Risk	12/21/2023	Integration and Interface Management	The IRS clarified policy that requires TOP data to be migrated to and accessed from the secure enclave per IRS Publication 1075 requirements.	Adherence to federal requirements necessitates a new solution for the storage and retrieval of TOP data. The redesign may impact the go-live delivery.	OPEN - Complete the interface functional redesign to utilize the Secure Enclave. - Modify existing TOP test plans to validate the proper handling of FTI information and integration to the balance of the BES system. - Work with FNS and IRS regarding the timeline for having TOP data and the tax offset functionality available to BES System users. - Once the new design is complete, estimate the Level of Effort and tasks/activities required through implementation to provide the Project Management Team with options as Pilot planning/activities are underway.	now	3	4	Med	Open	01/31/24 - Due to the unanticipated classification of FNS TOP data as Federal Tax Information (FTI), data collection and retention must be redesigned and placed in the Secure Enclave. This modification cannot be completed before FAT testing, currently planned for March 1, 2024, placing the incorporation of this functionality into the Pilot at risk.		
89	The current approach to complete development of the remaining R0.12 epics is condensed and aggressive and may increase the likelihood of schedule delays, quality issues, and higher volume of testing defects.	Torring, Erik	Finding - Issue	12/21/2023	Testing	Ten of the Epics scheduled for completion before Release 0.12 SIT will not be ready. To avoid SIT delays, the current approach is to begin SIT without the 10 Epics and test them as they are completed. Additionally, Release 0.12 development that was extended two weeks from the scheduled end date has been extended for another ten business days.	Overlapping development and testing introduces potential quality issues. Insufficient INT may create gaps in SIT, leading to further quality issues. This may increase the risk of significant delays or introduce defects into the production environment.	- Develop Contingency Plans if the mitigation plan continues to see slippage affecting INT and SIT. - The ASI provides comprehensive INT results and SIT scenarios for incomplete Epics to DHS for review/approval ahead of SIT execution. - The ASI release a detailed schedule of events, including development completion, INT start, and SIT start for each epic covered in the mitigation plan. - The ASI should evaluate if Epics entering SIT late might require retesting functionality that had already been tested.	Now	4	5	High	Open	1/31/2024 -To mitigate the INT and SIT overlap and incomplete SIT test scripts, the ASI moved the start of SIT to February 2nd, with "informal" SIT continuing in January. Despite this attempt, continued development delays and code quality issues led to adding 2 integration testing sprints, further extending integration testing. Additionally, on January 31, 2024, the ASI announced the delay of the February 2nd SIT entry date and stated that a new mitigation approach to meet the August Go-Live date was under development. IV&V has updated this finding to an "issue" and the Criticality Rating to "High".		
88	Implementing a Core Solution for go-live carries inherent risks that may impact overall project success and reduce user adoption.	Fors, Michael	Finding - Risk	11/30/2023	Project Management	The project has elected to implement a Core Solution at go-live to meet their stated timeline. This version is generally referred to in Agile software development as a Minimum Viable Product (MVP), which is a simplified version of a product that 1) offers functionality that meets the core needs of users, 2) can accelerate the timeline for go-live, and 3) allows the project to get real-world feedback from users to refine future product development.	Going live with a limited version of software product entails inherent risks, such as potential challenges in securing user buy-in. This can result in limited user adoption, user dissatisfaction, and negative publicity, particularly considering the financial investment made for the delivery of designs, user interface sophistication, and lead to an uptick in software bugs and suboptimal code. Further, this approach may expose the project to regulatory compliance risks, such as last-minute objections from regulatory bodies like FNS, which could find certain system elements non-compliant with their standards and delay the go-live date. Misalignment between stakeholder expectations and the Core Solution may lead to dissatisfaction or a lack of support for the project and could negatively impact future project funding requests. Implementing a limited Core Solution typically requires the customer to implement multiple workarounds until automated features can be built into the system. Users could become impatient if these features are further delayed when bug fixes and other features take precedence. Others may lose confidence that the features or system improvements will ever be implemented. Going live with a solution that is missing functionality that stakeholders were expecting typically requires an increase in OCM efforts both by the ASI and DHS staff to temper stakeholders' reactions to a system with limited functionality.	• Increase OCM efforts to effectively manage user, general public, and legislative expectations for the Core Solution approach. • Prioritize feedback from users and FNS to ensure the Core Solution meets their core needs and so users are clear on what features there are, and are not, getting in the released product. • Actively monitor, assess, and address potential challenges throughout the core solution development process including code quality, cutting scope to meet development milestones, insufficient user validation of demonstrated functionality, and fully defined workarounds to compensate for the missing functionality. • DHS carefully assess whether the advantages of a timely release outweigh the advantages of going live with a system that provides more comprehensive functionality, requires fewer workarounds, and increases user satisfaction.	Now	3	3	Med	Open	01/23/23 - The ASI recently transitioned the OCM leadership role to a new resource. OCM activities will be crucial in reducing the risk associated with implementing the Core Solution and effectively managing user, public, and legislative expectations. The effect of this transition is unclear to IV. 12/31/23 - Delays in some planned activities (e.g. epic demos, interface designs) and the development of the secure enclave are causing milestones to be missed. IVV remains concerned about potential quality impacts due to the need to accelerate efforts to compensate for missed milestones. Delays in some planned activities (e.g., epic demos, interface designs) and the development of the secure enclave is causing milestones to be missed. IVV remains concerned about potential quality impacts due to the need to accelerate efforts to compensate for missed milestones.		12/15/2023 - Above already addressed by DHS/Joe Campos.Ensure recommendations reflect "In Progress" or "In Process".
86	Limited collaboration between the ASI and DHS in the design process could lead to BES usability issues and functionality, and just testing gaps in the applications and not meeting critical business needs for DHS and State clients.	Molina, Brad	Finding - Issue	8/1/2023	System Design	During the UAT process for release 11, there has been a high level of concerns raised by the DHS testers regarding the usability of the BES system, challenges with the user interface, missing functionality, and basic screen layout issues that would not be expected in a modern application. Based on defect reporting from the UAT process, a large majority of the defects are related to "design errors". Although the Release 11 UAT cycle was testing a partially build system, a significant amount of design defects was attributable to functionality developed for Release 11.	A significant amount of money and DHS resource time have been invested in the BES solution, with the expectation that the new system will at minimum provide all functionality found in current applications – but really should provide additional capabilities, greatly enhanced user interface, and overall improved usability from current systems. Should the solution fall short of expectations, there may be challenges in DHS staff adoption; lack of confidence in the solution providing the accurate information needed to provide benefits to HI citizens; reduction in ability for DHS to provide the same level of needed services to clients, resulting in bad publicity for DHS and the state.	- Include a wide enough audience in all design and demo sessions to validate FNS and DHS functional and technical requirements and system usability. - Perform Sprint and Epic demos in alignment with development sprint completion (demo functionality/requirements as they are developed) to get early feedback on work products. - Perform comprehensive (demo all requirements) review during Epic demos, not just the items that were added/updated, allowing DHS to provide early feedback on possible issues/gaps that might not be apparent when focusing on specific functionality. - ASI and DHS re-evaluate the effectiveness of the recorded Sprint review process to ensure that designs align with DHS expectations.	Now	4	3	Med	Open	01/31/2024 - DHS viewed Sprint demos for Epics 247 and 284 on January 9, 2024, where several concerns/issues were raised, resulting in necessary bug fixes. User experience issues that should have been raised during the sprint demos were brought up during the Epic Demo for Epic 240 (repayment agreements), that the ASI is not considering at this time. As of the end of January, the ASI was developing a Go-to-Green Plan to mitigate several delays, including demos. 12/31/2023 - DHS opened a new high-severity project risk, which then escalated to an issue, on December 4, 2023, since the sprint and epic demos will not be completed by the end of the Release 0.12 DDI phase. IVV shares this concern, as issues discovered during the demos will require additional design, development, and testing for the impacted epic, potentially pushing out the schedule. 11/30/2023 - As of the end of November, the ASI has nine Sprint demos to execute and all 28 Epic demos. Depending on the outcome, this could cause the ASI to extend development while testing is occurring or defer the functionality to post-Pilot, creating additional unplanned work for DHS. 10/31/2023 - IVV notes positive progress this month in that the DHS SMEs are providing more feedback to the ASI on the BES design. The DHS PM has requested Sprint demo process updates to ensure that DHS staff who provided feedback are aware of the resolution of their comments. The ASI has also noted gaps in communication (design misunderstandings) between the ASI Business Analysts and DHS SMEs. DHS SMEs have suggested that communications would be clearer if they were included in live demos. IV&V respectfully requests that DHS and the ASI re-evaluate the Sprint Demo process as part of the overall evaluation of communication. 9/31/2023 - The DHS PMO reported that DHS SMEs have provided minimal feedback to the ASI on the four recorded Sprint demos this month. This supports IVV's concern that the new process will reduce collaboration to confirm that designs are in	10/11/2023 Jessica - Our SMEs are providing their feedback. This is one of the items that I clarified with IV&V, that there are feedback given, no feedback means ok is. I rec'd an email back from Joe F. that M&V wants to meet with our reviewer to validate this.	10/31/2023 - Vic - Conversations about live demos. Will keep as recorded demos, but we addressed JF - open comments Vic - after demo is complete, feedback and acknowledgement. Vic - for the next reporting period. We want to keep the feedback to the SME SMEs. We are getting off-the-way comments. Nicole is finding comments from staff that were not involved in detail.10/11/2023 Please reference
83	Gaps in test coverage and slower-than-expected progress in testing may result in schedule delays if subsequent test phases uncover a higher volume of defects and user feedback than initially anticipated.	Torring, Erik	Finding - Issue	6/2/2023	Testing	After examining the Project's R11 QA Dashboards, R11 Traceability Dashboards, and Test Repository, gaps in testing coverage may exist and it appears that not all epics and use cases in R11 have associated test cases or are testing the correct use cases. In terms of progress, some test cases remain unexecuted, and not all defects have been resolved as the project commences System Integration Testing (SIT). The ASI plans to complete the INT exit criteria by June 16, 2023, about 2 weeks after SIT begins.	Identifying defects early is vital for effective testing, as it is more efficient and cost-effective to address issues during the early testing stages. If there is slow progress or incomplete testing in the early stages, it can result in more defects leaking into subsequent testing phases, necessitating more extensive and rigorous testing efforts. Insufficient testing coverage or slower than-anticipated progress throughout the project lifecycle increases the risk of encountering significant delays, extensions, or the introduction of defects into the production environment during the final testing stage, known as Final Acceptance Testing (FAT).	OPEN The ASI should determine the root cause of the failure to identify simple defects in INT and SIT and implement effective improvement processes to confirm early testing is adequate before entering UAT/FAT. - DHS and ASI monitor INT/SIT closely for both breadth and depth of testing to ensure the system is adequately tested. - The Project team reviews the SIT exit criteria and reviews them as needed to ensure UAT/FAT begins with the best system possible.	UAT	4	4	High	Open	1/31/2024 - Due to development delays and testing defects, entry into SIT has been delayed to an undetermined date. Approved and final SIT script package before the 1/24 Go/No-go decision, the risk of introducing gaps in test coverage in SIT remains. 12/21/2023 - The ASI delivered the BI-20 (Release 0.12 BES Test Scenarios, Cases, and Scripts) to DHS for review and approval. However, 28 Epics did not include SIT test scripts, which the ASI proposed to provide as continuous updates when the data becomes available. This approach poses a risk to the Project as this deliverable informs DHS' go/no-go decision to start SIT testing. 11/30/2023 - During November, the ASI continued to create and update the SIT test cases. As reported last month, until this is completed DHS cannot evaluate the test cases for full coverage of BES functionality and provide proper sign-off to enter SIT. While these concerns are still present, the peer review process implemented by the ASI has resulted in improved quality and completeness of the test cases. There is additional concern related to the entry criteria for Release 12 SIT. SIT test cases, as part of Bill20, are scheduled for completion on 12/18 but the schedule reflects a 12/4 start date for SIT. DHS is reviewing SIT scripts as they are written, but the full magnitude of SIT test scripts will be unclear until the delivery of BI-20 on 12/18. Scope for SIT includes retests of Release 0.11 functionality and defect corrections which is part of regression testing. This should be clearly defined and specified to avoid improper entry to SIT before Release 12 development is complete. A SIT Go/No-Go decision meeting on 12/29/2023 was added to the BES Schedule. If this is the formal start to SIT, testing one before this SIT period would need to be rerun. 10/31/2023 - The ASI continues to update the System Integration Testing (SIT) process and test cases. Until this is completed by the ASI, DHS cannot verify that the SIT test cases are comprehensive and		12/15/2023 - The SIT that started on 12/4 is internal to eWorldES and not the official SIT start in January. The SIT that started is eWorldES internal testing to ensure already delivered functionality is working appropriately. 10/31/2023 - Vic - For R12, DHS will be able to evaluate SIT test scripts in Jira. FAT planning meeting when Trisha is back. SIT entrance criteria as well in these meetings. Vic - overlap of INT and SIT. Testing Will be testing everything that was previously done in prior releases.
82	The lack of technical documentation may lead to incorrect implementation statements or delay the System Security Plan	Heath, Dustin	Finding - Risk	4/27/2023	Security and Privacy	In April, the ASI/DHS system security plan (SSP) authors began writing implementation statements. Currently, the technical documentation supporting the SSP is unavailable, outdated, or in a draft form. During April, decisions on what logs support the SSP controls are still being decided on. Implementation statements are currently being written from the perspective of how the system should be designed from the SSP author's perspective instead of how it is actually designed. The SSP authors need to know and use documentation such as System Architecture and Design, network topology, dataflow, ports and protocols, tools used for logging, etc.	Once the system architecture and design have been completed, the SSP authors may need to edit or rewrite implementation statements. A full review of the SSP is unavailable, outdated, or in a draft form (ready for federal partner review) is scheduled for September 15, 2023. The SSP is a large technical document with hundreds of controls and control enhancements, and each one requires an implementation statement of how the control or enhancement has been met.	- Determine when the infrastructure design baseline will be completed. - Determine when documentation will be created, updated, and available for the SSP authors. - Collaborate and communicate with SSP authors about when reliable and correct documentation will be available. - Perform a full review of all SSP controls for content and accuracy that have been written as drafts prior to the start of the third-party assessment and submission of the SSP package to federal regulators. This will allow the SSP authors to update controls with changes from Design through Implementation.	Prior to the start of the third-party assessment.	5	4	High	Open	01/31/2024 – The DHS and ASI security teams continue to work on the secure enclave and documentation that supports the SSP. Documents scheduled for completion by 1/31/24 include the secure enclave SSP additions, Incident Response Plan (IRP), Privacy Impact Analysis (PIA), Configuration Management Plan, and Continuous Monitoring Plan. Other procedural documents will be completed by the end of February 2024. As the Independent Security Controls Assessment is dependent on the completion of some of these documents and artifacts, incomplete documentation may result in assessment findings. Early in January, the ASI reported a working production environment would be available on February 5th for the Independent Security Controls Assessment of BES. 12/21/2023 JF - The ASI received DHS approval for the BI-13 SSP on December 18. This deliverable is dependent upon draft DHS Policies and planned security controls that may change based on technical designs and documentation being finalized. The BI-13 was provided to SSA with supporting material to begin the SSA interface certification process. 11/30/2023 – During November, the ASI and DHS SMEs focused on the design of the secure enclave. The Security SMEs have considered the "assured workload" service from Google for applying security controls for the secure enclave. IV&V is concerned about whether the entire system will be built and documented in time for a third-party security assessment to occur in early 2024. Considering the level of effort outstanding and time remaining before Pilot, IV&V is raising the Criticality Rating to "High. 10/26/2023 – Throughout the month of October, both the ASI and DHS Security SMEs have focused on the design of the secure enclave (to store federal tax information and other sensitive data). A significant amount of work remains for both the System Security Plan and the development of required artifacts for the secure enclave that are planned to be complete by the end of November		1/12/2024 - Progress should reflect "In process". David Rolla conducted a high level review of the SSP controls and shared it with Barbara/Virgil for feedback during the week of December 10 (prior to submitting it to SSA). The implementation status for each control was updated to reflect the current status as of 12/12. This activity should not be confused for a security controls assessment, which is audit-style validation of the controls — typically conducted by a third party. As stated before,

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80	Development delays could negatively impact the project schedule and delay go-live.	Fors, Michael	Finding - Risk	6/30/2022	Configuration and Development	ASI had previously reported development activities have been slowed as they have been unable to achieve and/or maintain their expected development velocity. Previously, the development team was challenged with accurately estimating development task level of effort (i.e., story points) and the project has been challenged with producing a project schedule that accurately reflects realistic timelines (see Finding #74). The ASI continues to be challenged with finding qualified resources in a timely manner.	If the ASI is unable to achieve a velocity that enables them to meet planned milestones, schedule delays may lead to a delayed system go-live date. Failure to achieve a level of accuracy in estimating development tasks could lead to a project schedule that is flawed and unrealistic. Previously, DHS had indicated, and IVV agreed, that some of these delays were due to some ASI BAs lacking the expertise required to create optimal designs and system specifications that developers could consume without requiring extensive clarification from the ASI BA/SA team. DHS and IVV observed instances where ASI BAs/SAs have presented less than optimal designs and left it to DHS (who may lack software or UI design expertise) to improve, which has contributed to unproductive design sessions (see Finding #61). It remains unclear if scope creep has contributed to these delays.	OPEN • Request the ASI effectively track and regularly provide DHS (potentially via the weekly DDI status meeting) with an accurate velocity (e.g., story points per day/week/month) and assure that the current velocity is accurately and consistently reflected in the project schedule. • ASI provide DHS with the time needed to effectively evaluate the software demonstrations (demos) and elicit productive design discussions with DHS attendees during each demo. • ASI regularly report estimated story points for the total remaining project work to reach go-live and presents a dynamic burn-down chart to track the progress. COMPLETE CLOSED • DHS request the ASI strategically add the right project team resources to effectively increase velocity. Note that adding additional junior resources may not be as effective as staffing additional expert-level resources, or resources that can lead and mentor junior resources. • ASI reviews the development process and identifies and mitigates the challenges preventing them from incorporating Epic demo activities into the project schedule. (9/29/23 • ASI will not be doing this, with DHS approval)	Immediate	3	3	Med	Open	01/23/24 - Ongoing development delays are still affecting the Project, requiring additional development and INT Sprints and postponing Sprint and Epic demos. To keep the planned go-live date the project elected to overlap INT and SIT, but this is subject to the Go-to-Green Plan that the ASI announced at the end of January. 12/31/23 - The ASI reported development delays related to 10 epics but has also produced a mitigation plan to manage these delays and stay on track for go-live. IVV remains concerned that any additional delays might push out the project schedule and implementation milestones. 11/30/23 - The ASI reported delays in interface design and development, and unplanned development effort required to unwind EBT functionality deferred to post-go-live due to a missing requirement for PIN issuance. Additional development sprints were added to address the delays, and these sprints resulted in a planned overlap of development and INT with SIT. IVV remains concerned that additional development delays could require further reduction of scope and system features. 10/25/23 - The ASI has noted gaps in communication (design misunderstandings) between ASI BAs and DHS SMEs; DHS project management is working with the ASI to determine the best way to address this. The SMEs have suggested that design decisions/communications would be more productive if more than a few SMEs were included in the live demos. If these communication challenges continue, it could lead to development delays. While the ASI added 5 developers to focus on ADA defects, it remains unclear if addressing ADA requirements will incur further development delays. 9/28/23 - DHS SMEs have expressed concerns that the ASI appears to be cutting corners in order to increase their development velocity and meet development milestones. Though the project has elected to minimize scope creep, SMEs remain concerned that the ASI is pushing back on some important design refinements. They have noted that the		10/31/2023 - Vic - mixed bag here. We are mentioning design misunderstandings. MF - improve the design communications. Rama - I am trying to understand what development delays, two months left in DDI. Vic - we will evaluate the draft.
74	A BES Project schedule based on inaccurate estimations diminishes effective planning and resource management, which could result in late deliverables, cost increases, and a late go-live.	Molina, Brad	Finding - Issue	11/29/2021	Project Management	DHS and the ASI have tried multiple times to rework the schedule with results that have not yielded improvement. Concerns with the structure, estimating practices, and ability to manage to the schedule persist. The use of multiple tools to track resources obfuscate resource management. Previous IV&V findings focused on specific schedule components such as resource management and critical path analysis, all of which were addressed and closed.	If estimates for project schedule activities are not accurate, this can lead to constant schedule changes, resources not being available when needed, rushed activities, and general frustration which can lead to schedule delays, low quality output, scope changes, and budget issues.	OPEN - Monitor, evaluate and revise scheduling estimates for accuracy. - ASI provide details on how Velocity measures were used to develop estimations for development effort in new version of DDI schedule - ASI conduct a Root Cause Analysis (RCA) with DHS and IVV to determine why the BES Project Schedule continues to be impacted by unanticipated work. COMPLETE DHS and the ASI agree to a revised schedule against which project deliverables can be managed. (2/28/2023 - complete) ASI host a weekly meeting with DHS and IVV to review all changes to the project schedules (Primary and DDI). (8/31/2023-complete) CLOSED ASI plan and execute Epic development so that Epic demos can occur earlier in the release schedule and allow time for possible revisions. (12/31/2023 No done) As requested by DHS, add key milestones to the project schedule, such as Sprint and Epic demos, to show key progress towards completion of Epics. (9/29/23 ASI says that they will not do this.) Confirm current assumption that a delay with the current go-live date will not result in major implications. (6/29/23) Leverage velocity and burn down charts to adjust development tasks estimates if needed. (4/30/2023 - ASI using Jira) Using the available tools, review the current estimates to complete each activity compared to past actual hours (1/31/2023 - new ASI - Not Started) Update as necessary and provide the DHS/ASI Project Managers with reports and data that accurately reflect the DHS/ASI resource needs along with over/under allocations of staff for the duration of the Project (1/31/2023 - new ASI - Not Started) Develop mitigation and contingency plans that are tracked/managed by DHS/ASI for all tasks that are behind schedule or are at risk of being behind schedule which includes resource management. (1/28/2023 - new ASI) Discuss, validate and address additional concerns within the project processes that may cause project	Immediate	3	4	High	Open	1/31/2024 - At the start of January, a 4-week schedule delay to SIT was reported by the ASI to avoid an overlap of INT and SIT. On January 31, 2024, the ASI reported that SIT would not start as planned. The project status report indicated "Red" in most categories and ASI reported they were developing a Go-to-Green Plan. Further delays may be imminent. IV&V has raised the criticality rating of this finding to "High". 12/31/2023 - With 10 epics for release 0.12 in development, another development and integration testing sprint was added to the schedule. IVV remains concerned that under estimated effort and resulting elongation of schedule could impact implementation milestones. 11/30/2023 - Additional development and testing sprints were added to the schedule, supporting IVV's concern that the effort required for completing the core solution for BES continues to be under-estimated; potentially resulting in missed implementation milestones. The additional development sprints for interfaces will overlap with Integration Testing (INT) and the start of SIT in order to meet the Pilot and Go-Live dates. 10/31/2023 - The BES project schedule continues to have significant revisions after being re-baselined, including delays to tasks (a training task was delayed over a hundred days due to schedule refinement). IVV continues to monitor the schedule for possible estimation issues that could introduce risk in meeting key milestones of the project. 9/31/2023 - The ASI re-baselined both the Primary and DDI BES Implementation schedules, adding 8 weeks to release 0.12 and addressing DHS and IV&V's concerns that the prior schedules were underestimating the effort required to complete the remainder of the Project. As ASI requested to shift the Portal functionality after statewide implementation, IV&V remains concerned that downstream impacts on UAT planning and execution, Training, Organizational Change Management, and Operational readiness to plan for		11/17/2023 - As mentioned in our pre-meet, the only significant revisions made to the schedules were with the refinement of training dates. I also mention dates will continue to evolve as we progress further into the project phases. Please consider "softening" your status verbiage. 10/31/2023 Vic - Significant revisions, what are you concerned about? Brad - big swings in the schedule. Training. Vic - Training - Tony has been working to refine dates. As we know more it is
73	The planned BES infrastructure is complex which could be difficult to implement and lead to schedule/cost impacts.	Fors, Michael	Finding - Risk	10/28/2021	System Design	Current ASI infrastructure plans include a significant number of sophisticated components that make up a complex cloud infrastructure. Further, the Project Team has yet to finalize components that will make up the BES infrastructure and the additional costs and time to configure, test, and implement the planned complex environment remain unclear.	If the level of effort to implement and manage the complexities of the BES infrastructure is not accurately accounted for and staffed by the ASI, the project could be met with unexpected costs and schedule delays. Delays in finalizing the components being implemented could exacerbate this risks and lead to further delays. Complex platforms often present system maintenance and operations challenges as system changes can hold the increased potential for system failure (i.e., due to the significant number of "moving parts") and increase the level of time and effort to resolve infrastructure and application-level bugs. Further, some components remain in an immature state compared to their legacy counterparts. For example, the project recently experienced a system failure because Google Cloud failed to clearly communicate a change that led to failure in another component (i.e., Nexus). Google Cloud is generally viewed as a less mature product offering, compared to their rivals (Amazon Web Services, Microsoft Azure). IV&V remains concerned that this could lead to failures at critical points in the project (including post-go live production failures) that could be difficult to resolve and lead to project disruption. If DHS intends to eventually reduce M&O outsourcing costs turning over M&O tasks to State employees, they could face challenges supporting tools they may not be familiar with in a complex infrastructure environment.	• ASI develop a process to closely monitor cloud and other product changes (software updates/new releases), manage changes, and regression test once updates are applied. • The project team work to establish strong governance over the utilization and maintenance of the various system tools/components. • ASI allot time in the schedule to conduct proof of concepts to assure infrastructure components work as expected. • ASI maintain a detailed schedule for DevOps implementation tasks to avoid unexpected delays that could delay project milestones and the critical path.	Next several months	2	2	Low	Open	1/23/24 - No material update in the reporting period. IVV continues to monitor this finding. 12/31/23 - No material update in the reporting period. 11/30/23 - Some components of the BES system infrastructure have yet to be finalized and tested, it remains unclear how or if the added complexity will impact project schedules and budgets going forward. The ASI appears close to finalizing the Secure Enclave infrastructure to house FTI data. The ASI appears to be making progress on DR plans and designs. 10/30/23 - The ASI continues to have productive discussions with DHS during their weekly Architecture calls. The ASI has yet to finalize their plans and technical architecture for conducting Disaster Recovery (DR). The cloud technology being implemented offers some benefit and can simplify some elements of DR. However, it remains unclear if the complex infrastructure (with the multitude of components being employed) will impact their ability to test and perform DR. 9/28/23 - The ASI has experienced turnover of their Enterprise Architect position; this does not appear to have had a material impact on the overall infrastructure build. The ASI continues to make progress in the build-out of their infrastructure and is confident that the automation they've implemented will simplify many maintenance tasks Given that, they remain confident they will be able to meet infrastructure milestones without hindering development. The ASI has also stated that maintaining the system post-go-live will not require excessive effort and that achieving the SLAs will be possible. IVV remains concerned that some planned elements of the infrastructure have yet to be thoroughly architected, documented, and/or conceptually tested via proof of concept (e.g., the secure enclave and disaster recovery environment). 8/31/23 - The ASI has reported progress in the build out of Chronicle, their event logging tool. The weekly Architecture/Infrastructure coordination meeting appear		11/17/2023 - Again, why is DR being referenced here? Per the current project schedule, the DR plan is scheduled to be submitted at the end of the year. Reminder: Pilot Go-Live is April 2024. 10/31/2023 - Vic - westill do notunderstand why this remains. 10/11/2023 Please reference your updates on finding #82 Security and Privacy which documents the work being done for the Secure Enclave.
70	Insufficient configuration management could lead to development confusion and reduce the effectiveness of defect resolution	Fors, Michael	Finding - Risk	8/23/2021	Configuration and Development	The BI-6 DDI Plan Deliverable, Section 5.2 establishes the framework for the Configuration Management Plan, however, it remains unclear if sufficient progress has been made toward establishing CM processes and governance, selecting CM tools (e.g., CMDB), and building out the CM infrastructure. The projects Security Plan has yet to be finalized which may include additional requirements or decisions that could impact CM. The project currently relies on Github for tracking of some configurations.	Configuration Management is a set of processes and procedures that ensures the BES is understood and works correctly. The BES solution includes tools that may provide a level of automation for Configuration Management that may reduce errors and should provide the project team with accurate, dynamic and timely information on some of the configuration items. However, it is critical that DHS/ASI agree to the full list of items that are included in the configuration plan along with the details regarding the management of the configuration items, reporting and audit features.	OPEN • ASI adhere to plans for configuration management as documented in BI-6 DDI Plan, Section 5.2 and clarify details and/or any changes with DHS. • ASI validate plans for configuration management with DHS and agree on a meaningful set of configuration items or settings they will track. • DHS and ASI work to clarify/solidify plans for the potential use of configuration management tools. COMPLETED • Identify the DHS POC for the Configuration Management Activities and assure defined CM steps and plans are being followed, are effective, and are achieving DHS objectives for CM. 7/31/2022	ASAP	2	2	Low	Open	1/23/24 - No material update in the reporting period. 12/31/23 - The project will utilize the DHS contractor currently assisting with security activities to update the Configuration Management Plan (CMP). The scope of work that the DHS contractor is responsible for is unclear to IV&V. 11/30/23 - The ASI has yet to provide a detailed list of configuration items to DHS and IVV. IVV has restated this request to the ASI so that the level of detail is clear. 10/26/23 - The ASI provided broad information on the configuration items being tracked but have yet to provide detailed configuration items for IVV review. The ASI has deprioritized some configuration management activities, which it intends to perform in preparation for Maintenance and Operation (M and O). 9/28/23 - The ASI gained DHS' approval on the items that will be tracked and monitored as part of configuration management. IVV requested the list last month and is waiting on the ASI. 8/31/23 - No material update. 7/31/23 - No material update. 6/30/23 - No material update. 5/31/23 - The ASI continues to make progress with its utilization of the ServiceNow Configuration Management (CM) tool. They have recently performed an initial import of Google Cloud Platform server details into the ServiceNow Configuration Management Database. *** Continued work. Setup in ServiceNow, will be building up instances. Ongoing support and main. Dont' think still a risk, IV to discuss. 4/30/2023 - The ASI finalized the ServiceNow (SN) modules they will utilize for the project. 3/31/2023 - The ASI is currently evaluating which Service Now (SN) modules that would provide oversight of configuration management they intend to perform has yet to be determined. 2/28/2023 - The new ASI intends to utilize ServiceNow (SN) for most configuration management tracking. Details of exactly how they'll be using SN and its multitude of modules and capabilities remain unclear.		10/31/2023 - Vic - We provided a listing, working on a plan to implement. MF - Broad categories Vic - we are working on the details now. This will become more important and we work to get ahead of the M&O plan. 10/11/2023 IV&V requested the list last month and is waiting on the ASI to respond - Please see the following list of configuration management items which are/will be managed in ServiceNow: Incident Response Change/Configuration Management

ID	Title	Reporter	Finding Type	Identified Date	Category	Observation	Significance	Recommendation	Event Horizon	Impact	Probability	Priority	Finding Status	Status Update	Client Comments	Vendor Comments
63	The lack of early planning and coordination with interface partners may result in schedule delays.	Reynolds, Mark	Finding - Issue	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, SIT, UAT).- Interface planning and execution tasks and activities, including those for interface partners, are neither resident nor managed within the Project Schedule.	DDI project 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 can minimize the risk of potential delays. In addition, after planning has been completed, interface partners will have to be available during interface implementation to ensure that the interfaces are properly developed and tested before deploying the system to production.	OPEN 6. Confirm testing dates with interface partners in writing. 7. Complete early proof of concept interfaces to avoid unexpected delays due to external organization miscommunications or their own internal delays in assisting the BES project. CLOSED 8. ASI and DHS conduct a root cause analysis to determine the reason FDDs were changed without DHS knowledge. COMPLETE 1. Establish a communication plan for each interface partner for the duration of the BES DDI activities. COMPLETED 10/29 2. Identify and document all interface partners' contacts. COMPLETED 3/31/2022 3. Define a release schedule for each interface to include milestone dates, coordination, and execution and share with the interface partners. COMPLETED 01/04 4. Determine which deliverable will include the details associated with the planned connectivity and detailed technical designs of all interfaces. COMPLETED 01/04 5. Complete all MOAs and obtain formal approvals. COMPLETED 01/31/2024	Prior to FAT	5	4	High	Open	01-31-2024 - The final two MOA/MOUs were signed. Interface development is behind schedule and will require workarounds when FAT begins. The ASI faces challenges with interface partners that lack test environments. The interface testing team has not scheduled meetings, nor published test plans and schedules to coordinate with the interface partners. 01-04-2024 – Due to the number of open issues that could potentially impact interface development (e.g., incomplete agreements, unavailable test regions, and interface/batch testing schedules yet to be defined) IVV has raised the criticality rating to High. 11-30-2023 - Two of the 23 MOA/MOUs (DLIR and DoTAX) are not signed and remain outstanding. DHS continues efforts to complete these agreements to minimize further impact on the project. This finding is now an issue due to the realized impact to the project. The SSA interface requires documentation to be submitted 120 days before the pilot's data usage. This SSA documentation is expected to be ready by December 15th, 107 days prior to the April 1st pilot. Although the SSA has informally stated that they can complete the review within the shorter timeframe, a risk exists to the availability of the SSA data. The interface testing team was organized in November, but planning has not begun and meetings have not commenced. Interface testing remains unscheduled and is a growing concern as the Pilot date approaches. The ASI in internally reviewing the Interface Test Plan and will share it with DHS in December. 10-26-2023 - Two out of 23 MOA/MOU are outstanding; the ASI is reporting an agreement was reached with DLIR and it is ready for signature; the DoTAX MOU does have some challenges and is currently being addressed by the ASI and DHS. The Functional Design of all 23 Interfaces was completed and approved by DHS. Nine of the twenty-three Interface Control Documents were completed, reviewed, and approved by DHS. 09-29-2023 - The Memorandums of Agreement and the Memorandums of Understanding		10/31/2023 - Good and accurate as of the end of October. Met with DoTAX (Cory) to get appendix details. Sent to Scott M. to finalize updates, then send to AG. DoTAX is one of the interfaces that will overlap SIT. They are busy in the tax season.

Vic - Rama has updates. Pushback from OIT about sample files. Rama - set up a batch team for end-to-end coverage. We met with Ryan S. and OIT about sample files. We asked for masked PROD files for ease of use. OIT said no. We are creating a batch |