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July 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,

Tom Ku

Tom Ku
Acting 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: June 1 – 30, 2024

Submitted: July 15, 2024

PUBLIC CONSULTING GROUP

Solutions that Matter

Overview

PUBLIC CONSULTING GROUP
Solutions that Matter

Executive Summary

Executive Summary

The Project achieved a major milestone in the June reporting period with the start of Final Acceptance Testing (FAT) for the BES 1.0 release. The ASI worked to resolve the defects found in System Integration Testing (SIT) to meet the scheduled date for the completion of SIT. By meeting the SIT exit criteria with some contingencies, FAT was able to start on June 24, 2024.

With the project entering this key phase of FAT and moving closer to Pilot and Statewide Go-Live, IV&V is monitoring the project team's progress in the following areas.

- The quantity and severity of defects found in FAT will show the strength of SIT in verifying that BES is ready for DHS testing and acceptance. Some of the BES 1.0 functionality (mostly reports) will be phased into FAT, requiring additional coordination between DHS and the ASI.
- The Project's ability to perform according to the approved BES Project Schedule continues to be a high-risk area. Realizing the revised dates could be challenging while managing the complexity of supporting DHS in FAT, completing the remaining BES 1.0 work that will be phased into FAT, developing BES 1.1 functionality, and preparing for the September 16, 2024, Pilot start.
- DHS has requested documented workarounds from the ASI that address how requirements will be met in areas where the BES functionality will not be delivered for Pilot. This has been an ongoing topic in the weekly readiness meetings, but DHS has not received any documentation. Having this information available is important for DHS's preparation for Pilot and end-user training.

IV&V notes the DHS and ASI positive collaboration continues to show the team's commitment to this Project.

Apr	May	Jun	Category	IV&V Observations
H	H	H	Project Management	This category remains at High risk because the schedule has been revised six times due to delays since February 2023. With the project schedule re-baselined in June, IV&V will monitor the project team's execution of tasks according to the scheduled dates.

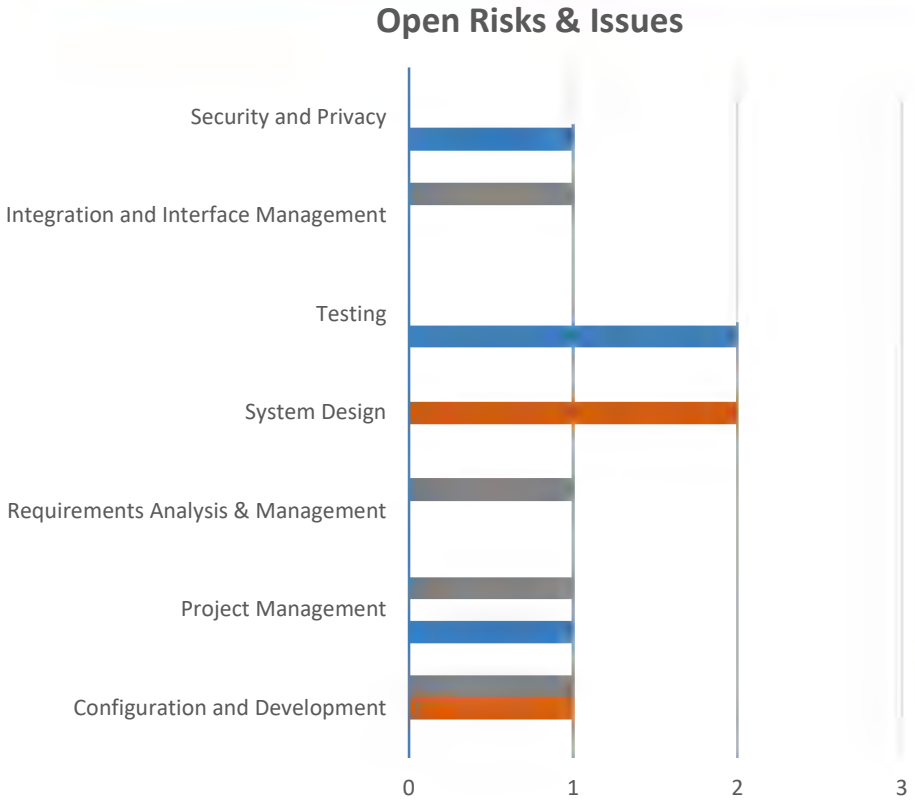
Executive Summary

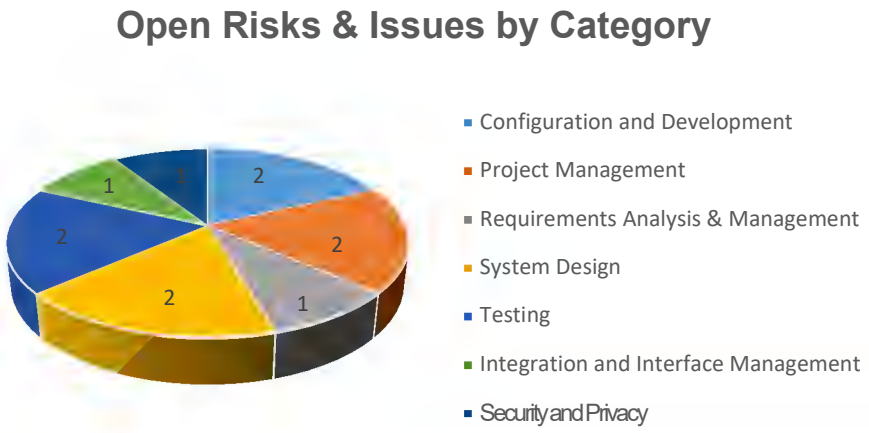
Apr	May	Jun	Category	IV&V Observations
M	M	L	System Design	Positive progress with DHS and ASI design collaboration has moved the Criticality Rating of this category to 'Low'.
M	M	M	Configuration and Development	The ASI is developing agile burndown charts that should provide DHS visibility to the productivity of the development team, identifying work in a complete status and the work remaining.
H	M	M	Integration and Interface Management	The ASI created and is executing interface testing. The testing results are expected to be available in July 2024.
H	H	H	Testing	The Project completed the SIT and started FAT testing phases for BES 1.0, a significant milestone. However, testing challenges remain, including the number of reported defects, which the project team and IV&V are monitoring.
H	H	H	Security and Privacy	This category remains a 'High' risk to the project. The System Security Plan (SSP) references thirty-nine documents that are in draft form or do not exist. Thirty of these documents are DHS' responsibility, and nine (9) are the ASI's responsibility. These gaps in documentation may delay the completion of the SSP, which is required for Pilot.
M	M	M	Requirements Analysis & Management	The ASI updated the Requirements Traceability Matrix (RTM) in response to DHS comments. The BI-21 RTM for BES 1.0 was not ready for DHS deliverable review by the end of the month as planned due to the format not meeting DHS expectations. DHS and IV&V will review the revised deliverable when published to ensure the contractual requirements are effectively and completely tracked and validated through DHS' final acceptance.

IV&V Findings and Recommendations

IV&V Findings and Recommendations

As of the June 2024 reporting period, PCG is tracking 11 open findings (5 risks, 6 issues) and has retired a total of 76 findings. Of the 11 open findings, 4 are High, 4 are Medium, and 3 are Low.





IV&V Findings and Recommendations

The following figure provides a breakdown of the 87 IV&V findings (positive, risks, issues, concerns) by status (open, retired).

IV&V Findings and Recommendations

Findings Retired During the Reporting Period

#	Finding	Category
95	**A lack of documented negative tests (e.g., invalid inputs, boundary testing, and deviations from the normal flow) may lead to an inability to confirm this testing occurred**. IV&V reviewed the sample set of negative tests (e.g. issuance of warnings and error messages resulting from invalid data and invalid security permissions) and test results provided by the ASI and confirmed that the testing is being accounted for. Therefore, IV&V is closing this finding.	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.** The Project's ability to perform according to the approved BES Project Schedule continues to be a high risk. The ASI completed their schedule reviews with DHS and IV&V, baselining the schedule on 06/19/2024. IV&V continues to monitor a schedule that has seen six (6) delays to the Pilot and Statewide Go Live dates since the BES 2023 restart in February 2023, with two (2) eight-week delays introduced in March and May of this year. The original Pilot start was 01/02/2024, with Statewide Go-live on 04/01/2024. Based on the schedule published on June 29, 2024, Pilot starts on 09/16/2024, and the Statewide Go-live is on 02/10/25.	H

Recommendations	Progress
• Monitor, evaluate and revise scheduling estimates for accuracy based on the project teams past performance and resources available to do the remaining work.	In Process
• ASI conducts a Root Cause Analysis (RCA) with DHS and IV&V to determine why the BES Project continues to experience schedule delays.	In Process
• ASI Project Management works with the development teams to evaluate the accuracy of development velocity and adjust accordingly to reduce risk in the revised BES project schedule.	In Process
• ASI provides Burndown charts that provide visibility into the remaining work.	In Process

IV&V Findings and Recommendations

Project Management

#	Key Findings	Criticality Rating
88	**Risk – Implementing a Core Solution for go-live carries inherent risks that may impact overall Project success and reduce user adoption.** Per DHS's request, the ASI is currently developing a list of workarounds to address known gaps in BES 1.0 functionality.	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
• Actively monitor FAT and Pilot feedback and track users' biggest pain points. Pain points can then be prioritized based on negative impact and project leadership can decide if fixing or changing poor designs can be implemented prior to go-live.	Not Started

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.** IV&V observed DHS and the ASI working collaboratively in a setting that promoted healthy dialogue on the BES design therefore, the criticality rating is updated from a medium to low.	L

Recommendations	Progress
• 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.	In Process

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 for this reporting period.	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

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 for this reporting period.	L

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	**Issue – Development delays could negatively impact the project schedule and delay go-live.** The ASI adjusted how they calculate velocity to provide greater transparency on the level of progress. The ASI is creating burndown charts to provide greater visibility/clarity into their development productivity and progress. The Project continues to be challenged with high defect rates which pose code quality risks that could delay go-live.	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
• The ASI should consider enhancing the depth of developer unit testing.	Not started

IV&V Findings and Recommendations

Integration and Interface Management

O	Key Findings	Criticality Rating
93	**Risk – Due to the lack of physical and technical (Transport Layer) testing of the interfaces and data transfer failure, conditions may exist with data format, boundaries, and dependencies. These failures may result in intermittent and hard-to-isolate problems or errors.** The ASI has prepared the test scripts for the 12 interfaces included in the-Pilot release. This first round of test scripts reside in the Jira tool and are being executed to be complete by mid-July. The Office of Information Technology (OIT) will be required to provide special case file alterations.	M

Recommendations	Progress
• API interfaces should be tested for failure conditions during connection and transfer operations.	In Process
• FTP and file interfaces should be tested for data and file integrity.	In Process
• Test data fields for system impacts resulting from data that is poorly formatted, out of range, or other unexpected data transmission errors.	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.** Improvement of System Integration Testing (SIT) defect resolution totals addressed IV&V's concern that the high number of unresolved defects would delay SIT exit. The ASI exited the SIT phase as scheduled on 6/21/2024 with 91 unresolved defects (43 medium severity and 48 low severity, or 10% of the total) compared to 352 unresolved defects at the end of May and with no unresolved critical and high-priority/severity defects. However, IV&V is concerned that the project team entered Final Acceptance Testing (FAT) on 6/24/2024 without approved versions of the RTM and System Integrity Review Tool (SIRT) deliverables. While the SIRT is not a criterion for entering FAT, both the RTM and SIRT deliverables demonstrate that the BES system meets functional and contract requirements. Risk exists that testers may identify unmet contractual requirements during FAT execution that delay the Pilot or result in the need for workarounds that can compromise system usability or user satisfaction. IV&V will monitor testing results and trends as the project moves through FAT execution.	H

Recommendations	Progress
• Monitor INT/SIT closely for both breadth and depth of testing to ensure the system is adequately tested.	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 Epics is condensed and aggressive and may increase the likelihood of schedule delays, quality issues, and a higher volume of testing defects.** In May, the ASI published a revised implementation schedule that extended design, development, and System Integration Testing (SIT) execution and delayed the start of Final Acceptance Testing (FAT) by six weeks. This extension allowed the ASI to adopt a risk-reducing change to deliver all functional groups to the remainder of SIT without phasing in functionality. However, the current schedule postpones the development of some reports and includes phasing into SIT and FAT reports (Group 1 and Group 2) and the TANF data extract and Mass Change (Group 3). In addition, with DHS's approval, the ASI shifted a subset of reports from Group 1 (SIT completion of 6/21/2024) to Group 2 (SIT completion of 7/19/2024). IV&V is concerned that the phasing reports into FAT and overlapping development and testing efforts adds complexity to resource and schedule management and can compromise test execution quality.	

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 validates that development and testing resources have sufficient bandwidth to complete overlapping assigned responsibilities	In process

IV&V Findings and Recommendations

Security and Privacy

#	Key Findings	Criticality Rating
82	**Issue – The lack of technical documentation may lead to incorrect implementation statements or delay the System Security Plan (SSP).** The ASI reported that they continue to author security documentation throughout June 2024. All available documentation, such as policies or procedures cited in the system security plan (SSP), has been provided to the BES third-party security assessment team. Seventy-nine (79) documents are cited in the SSP by name. Thirty-nine (39) of those documents are either in draft form or do not exist. Of the thirty-nine (39) documents, thirty (30) documents DHS was identified as the owner, and nine (9) the ASI was recognized as the owner. Penetration testing was moved from the UAT environment to the production environment and the assessment team was ensured that production and UAT were in parity with each other. One reason to move the environment was to keep the penetration testing from interfering with final acceptance testing. The ASI reports the production environment will be available for penetration testing on July 1st, 2024. However, this delayed the penetration testing another week. The Social Security Administration (SSA) is scheduled to perform its security assessment on July 8th, 2024.	H

Recommendations	Progress
• Determine when the infrastructure design baseline will be completed.	Complete
• 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 Findings and Recommendations

Requirements Analysis & Management

#	Key Findings	Criticality Rating
94	**Risk - The lack of an effective way to validate BES requirements could lead to project delays and unfulfilled user needs if DHS later identifies unmet contractual requirements.** IV&V is reporting positive movement on this risk this month. The ASI delivered a draft BI-21 RTM to DHS and used DHS feedback to revise the RTM's structure to simplify the tracing of requirements, use cases, epics, and tests in a single report. The ASI continues to make additional revisions to further streamline the RTM format and align more closely with the Deliverable Expectations Document. An approved RTM was not delivered by 6/21/2024 per the schedule nor by the end of this reporting period. Until the ASI submits a final RTM for review, the risk remains that all contractual requirements have not been fully validated, which could result in a system with unmet user needs.	M

Recommendations	Progress
• Develop a document that provides DHS with a feasible and effective way to map requirements to passed test cases, and, per the BI-19 (Complete and Final Test Plan),"Maps the functional and technical requirements to the test cases and test scripts".	In Process
• Ensure test scripts thoroughly and comprehensively test the system to assure each requirement has been fully met.	In Process

IV&V Status

IV&V Engagement Status

IV&V Engagement Area	Apr	May	Jun	Comments
IV&V Budget				
IV&V Schedule				
IV&V Deliverables				PCG submitted the final May IV&V Monthly Status Report.
IV&V Staffing				
IV&V Scope				

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 June reporting period:
  - Completed – May 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 July reporting period:
  - Ongoing – Observe BES Design and Development sessions as scheduled
  - Ongoing – Observe Bi-Weekly Project Status meetings
  - Ongoing – Observe Weekly M&O 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	06/05/2024, 06/12/2024, 06/19/2024	N/A
BI-5 Project Schedule - BES 2023 DDI	06/05/2024, 06/12/2024, 06/19/2024	N/A
M&O Project Schedule	6/17/2024	N/A
BI-21 Release 1.0 Functional and Technical RTM	6/24/2024	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
R0.12 Epic and Sprint Demo Recordings	N/A	N/A
ADA dashboard	N/A	N/A
Jira Requirements Details	N/A	N/A
Jira Testing Lists	N/A	N/A
FAT Testing Dashboard	N/A	N/A

Additional Inputs

Meetings and/or Sessions Attended/Observed:

1. IV&V Team Meeting – 6/3/2024, 6/6/2024, 6/10/2024, 6/13/2024, 6/17/2024, 6/20/2024, 6/24/2024, 6/27/2024
2. IV&V May 2024 Pre-Draft MSR Findings Review – 6/7/2024
3. HI DHS BES January Draft IV&V Report Review – 6/14/2024
4. Bi-Weekly DHS and IV&V Touch Base – 4/2/2024, 4/9/2024, 4/16/2024, 4/30/2024
5. Weekly BES Infrastructure meeting – 6/7/2024, 6/14/2024, 6/21/2024, 6/28/2024
6. DHS/IV&V Check-in – 6/6/2024, 6/21/2024
7. Weekly Client BES 2023 Project Status Meeting – 6/5/2024, 6/12/2024, 6/19/2024, 6/26/2024
8. Security Touchpoint – 6/5/2024, 6/12/2024, 6/19/2024, 6/26/2024
9. Weekly Data Conversion Workgroup – 6/4/2024
10. (Externa(l) Weekly Interfaces Touchpoint – 6/3/2024, 6/17/2024, 6/25/2024
11. (External) Readiness - Working Group Meeting – 6/4/2024, 6/18/2024
12. (External) Bi-Weekly Client BES 2023 Schedule Review/Status – 6/5/2024
13. (External) Bi-weekly BES CCB Meeting – 6/12/2024, 6/26/2024
14. (External) BES: FNS Connect – 6/6/2024, 6/20/2024
15. (External) C!A Current Weekly Checkpoint– 6/4/2024, 6/18/2024, 6/25/2024
16. [External] BES M&O Project Schedule Review– 6/20/2024
17. eWorld/IV&V Mid Month Check-in – 6/21/2024
18. (External) BES M&O Project Status Meeting – 6/3/2024, 6/10/2024, 6/17/2024, 6/24/2024
19. (External) BES BI-05 Project Schedule updates DCF – 6/5/2024, 6/6/2024
20. (External) BES Data Conversion - Source to Target Mapping Review – 6/6/2024, 6/13/2024, 6/18/2024, 6/20/2024
21. (External) DHS BES M&O Working Session #2 – 6/12/2024
22. (External) Report A Change (RAC) Design kick-off meeting – 6/12/2024, 6/19/2024, 6/21/2024, 6/25/2024, 6/26/2024, 6/27/2024, 6/28/2024
23. (External) DHS BES M&O Working Session #3 – 6/14/2024
24. (External) BES M&O Service Now Demo#1 – 6/18/2024
25. (External) BES M&O Service Now Demo#2 – 6/19/2024
26. (External - Epic Demo) Epic 209 Work Participation – 6/20/2024
27. (External) BES 1.0 FAT Go/No-Go – 6/21/2024
28. (External) BES 1.0 FAT Kickoff – 6/24/2024
29. (External - Epic Demo) Epic 203 Report Viewing and On-demand Submission – 6/25/2024

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 Matter

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
94	The lack of an effective way to validate BES requirements could lead to project delays and unfulfilled user needs if DHS later identifies unmet contractual requirements.	Hackett, Donna	Finding - Risk	4/25/2024	Requirements Analysis & Management	The Requirements Traceability Matrix (RTM) (BI-21) plays a vital role in ensuring the system's compliance with contractual commitments by associating each requirement with passed test case(s). However, the approved project schedule shows the RTM completed on 6/26/24, which falls after the Core SIT exit decision on 5/10/24. The ASI provided the BI-22a System Integrity Review Tool (SIRT) to DHS on April 26, 2024, but withdrew the deliverable due to DHS concerns. This BI-22a deliverable may help DHS validate requirements.	It is unclear to DHS and IVV how the ASI will trace requirement coverage for SIT completion. DHS may be unable to make an informed decision on SIT exit criteria. This could lead to DHS starting Final Acceptance Testing (FAT) and then realizing that not all requirements have been fully met, resulting in delays.	IN PROGRESS • Develop a document that provides DHS with a feasible and effective way to map requirements to passed test cases, and, per the BI-19 (Complete and Final Test Plan), Maps the functional and technical requirements to the test cases and test scripts. • Ensure test scripts thoroughly and comprehensively test the system to assure each requirement has been fully met.	5/10/2024	3	3	Med	Open	6/30/2024 - IVV is reporting positive movement on this risk this month. The ASI delivered a draft BI-21 RTM to DHS and used DHS feedback to revise the RTM's structure to simplify the tracing of requirements, use cases, epics, and tests in a single report. The ASI continues to make additional revisions to further streamline the RTM format and align more closely with the Deliverable Expectations Document. An approved RTM was not delivered by 6/21/2024 per the schedule nor by the end of this reporting period. Until the ASI submits a final RTM for review, the risk remains that all contractual requirements have not been fully validated, which could result in a system with unmet user needs. 5/31/2024 - In the revised schedule, the ASI provides the BI-21 Requirements Traceability Matrix (RTM) for review on 6/7/24 (before FAT entry). The updated SIRT will be provided at the same time. Although the RTM is being provided ahead of schedule in response to DHS' request, DHS now faces reviewing 2 major project deliverables (BI-21 RTM and BI-22a SIRT) during the same 7-day (6/7-14/2024) period. If the revised schedule does not allow enough time for DHS to review these deliverables or the RTM does not fully support DHS' ability to validate the BES system requirements, FAT entry and go-live may be delayed. IVV shared this concern about the review overlap with the ASI on May 31 and the ASI immediately responded that they would address it.		7/12/2024 I'm not sure if this is worth noting but eWorldES did deliver an "interim" BI-21 RTM to satisfy the requirement criteria for entering into BES 1.0 FAT. 06/14/2024 The BI-21 RTM deliverable has been reviewed and discussed multiple times at the bi-weekly CCB meeting. Draft reports of the BI-21 have also been provided and reviewed. Please referencehttps://unisysbes.atlassian.net/wiki/spaces/PMO/pages/893670108/CCB+Meeti
93	Due to the lack of physical and technical testing of the interfaces and data transfer failure, conditions may exist with data format, boundaries, and dependencies. These failures may result in intermittent and hard-to-isolate problems or errors	Reynolds, Mark	Finding - Risk	4/29/2024	Integration and Interface Management	Aside from the functional testing accomplished during epic testing, specific data flow testing is usually part of an interface definition.	This testing is essential before initial deployment to prevent unexpected and difficult-to-resolve issues, such as scrambled or missing data – or the system may have a fault or exception. Since the Project has not established and tested the fault scenarios, we do not know how the system may react.	In Process 1. API interfaces should be tested for failure conditions during connection and transfer operations. 3. FTP and file interfaces should be tested for data and file integrity. 4. Test data fields for system impacts resulting from data that is poorly formatted, out of range, or other unexpected data transmission errors. Removed 2. (n/a, no transactional interfaces therefore no race conditions] API interfaces should be tested for race conditions. 5. [redundant with #4] Interface records and files should be tested for format, length, or other physical formatting errors.	2024 2nd Qtr	4	2	Med	Open	06/28/2024 - The ASI has prepared the test scripts for the 12 interfaces included in the Pilot release. This first round of test scripts reside in the Jira tool and are being executed to be complete by mid-July. The Office of Information Technology (OIT) will be required to provide special case file alterations. 05/23/2024 - The ASI and DHS continue to define the interface test approaches. Technical interface testing details, including the Transport Layer, are planned to be discussed in June.		06/14/2024 As mentioned at the May pre-meet, a technical Interface team plan does exist to address PCG's recommendations for this finding.5/11/2024 As mentioned at the pre-meet, a technical Interface team plan does exist to address PCG's recommendations for this finding.
89	The current approach to complete development of the remaining epics is condensed and aggressive and may increase the likelihood of schedule delays, quality issues, and higher volume of testing defects.	Hackett, Donna	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.	OPEN - The ASI validates that development and testing resources have sufficient bandwidth to complete overlapping assigned responsibilities - 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. CLOSED - The plan to complete BES implementation does not include overlapping testing phases (5/24/2024) - The ASI should evaluate if Epics entering SIT late might require retesting functionality that had already been tested. (closed 06/01/2024) - The ASI release a detailed schedule of events, including development completion, INT start, and SIT start for each epic covered in the mitigation plan. (closed 06/01/2024) CANCELED - Develop a Risk Mitigation Plan to address challenges of managing multiple test environments, multiple code bases and versioning within and across Releases.	Now	4	5	High	Open	6/30/2024 - In May, the ASI published a revised implementation schedule that extended design, development, and System Integration Testing (SIT) execution and delayed the start of Final Acceptance Testing (FAT) by six weeks. This extension allowed the ASI to adopt a risk-reducing change to deliver all functional groups to the remainder of SIT without phasing in functionality. However, the current schedule postpones the development of some reports and includes phasing into SIT and FAT reports (Group 1 and Group 2) and the TANF data extract and Mass Change (Group 3). In addition, with DHS's approval, the ASI shifted a subset of reports from Group 1 (SIT completion of 6/21/2024) to Group 2 (SIT completion of 7/19/2024). IV&V is concerned that the phasing reports into FAT and overlapping development and testing efforts adds complexity to resource and schedule management and can compromise test execution quality. 5/31/2024 - The risk of a schedule delay was realized when the ASI published a revised project schedule (under DHS review as of 5/30/2024) that extends design, development and SIT execution and pushes the start of FAT from 5/13/2024 to 6/24/2024. IVV will evaluate performance to the revised schedule (which removes the overlap of remaining pilot development and test execution efforts) to determine whether these actions will help to avoid further schedule delays. 4/30/2024 - The eight Epics expected to enter SIT in a phased approach are delayed and have not done so by the end of April. SIT is scheduled to end for these Epics on May 23, 2024. Of 348 executed core correspondence SIT tests, 177 (51%) failed, with the Eligibility Client Correspondence type comprising 83% of those failures. The high proportion of failed SIT correspondence tests supports IV&V's ongoing concern that overlapping testing phases and BES releases compromise test execution quality. IV&V is also concerned that the high number of SIT defects detected within a single correspondence type indicates its complexity and increases		06/14/2024 Why is this still red? This should be in yellow for monitoring after discussions in April (March report). In addition, the items listed should be done. All SIT tests have been reviewed and approved by DHS. There is no retesting needed based on the epics being phased in.04/10/2024 - eWorldEs used and followed the same SIT entry criteria as documented in the BI-19 for BES 1.0. There were no amendments to the BI-19 needed as a result of the "go" decision. An exception was made by DHS for
88	Implementing a Core Solution for go-live carries inherent risks that may impact overall project success and reduce user adoption.	Molina, Brad	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 a 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 limited functionality. A compressed timeline may compromise the quality 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.	OPEN • 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 they 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 accommodate for the missing functionality. • Actively monitor FAT and Pilot feedback and track users' biggest pain points. Pain points can then be prioritized based on negative impact and project leadership can decide if fixing or changing poor designs can be implemented prior to go-live. COMPLETE CLOSED • 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 and buy-in. (06/30/2024)	Now	3	3	Med	Open	6/20/24 - Per DHS's request, the ASI is currently developing a list of workarounds to address known gaps in BES 1.0 functionality. 5/23/24 - No material update. 4/30/2024 - No material update. 03/30/24 - The ASI's Go to Green plan and project schedule were approved by DHS. Per the Go to Green plan, some required BES functionality will be implemented post-Pilot. This may create unplanned workarounds and rework as the full impact of this approach becomes known through testing and training. 02/29/24 - The ASI drafted a Go-to-Green plan that includes an October 2024 Go-Live date, with several features to be released after Pilot. Implementing the functionality of a core solution not tested in a real-world Pilot environment may lead to unexpected issues and bugs. IVV remains concerned that user expectations will not be fully met as the go-live system will be missing functionality that could be important to many users. 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 ASI has stated they do not expect this transition to negatively impact the project and have noted some potential improvements. 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 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.		04/10/2024 - "Some required BES functionality will be implemented post-Pilot." What does this mean? I think I know the intent and perhaps update as such? "Per the Go to Green plan, the ASI plans to implement required functionality in multiple releases (Pilot/Statewide/Post Statewide)."12/15/2023 - Above already addressed by DHS/Joe Campos.Ensure recommendations reflect "In Progress" or "In Process".

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86	Limited collaboration between the ASI and DHS in the design process could lead to BES usability issues and functionality gaps in the applications, 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.	OPEN - 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. CLOSED - ASI and DHS re-evaluate the effectiveness of the recorded Sprint review process to ensure that designs align with DHS expectations. (closed 3/31/2024) - Include a wide enough audience in all design and demo sessions to validate FNS and DHS functional and technical requirements and system usability (closed 6/14/2024) - 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. (closed 6/14/2024)	Now	2	2	Low	Open	6/31/2024 - IV&V observed DHS and the ASI working collaboratively in a setting that promoted healthy dialogue on the BES design therefore, the criticality rating is updated from a medium to low. 05/30/2024 – The ASI plans to continue live Sprint Demos for the remaining Epic design work, providing a venue to increase collaboration with DHS. The SSP development will follow the Waterfall methodology, so no sprints or demos will occur. 04/30/2024 - IVV commends the ASI and DHS team for reverting to conducting four live sprint demos in support of Epic 209. These proved to enable timely, efficient collaboration. 03/31/2024 - Due to a high number of questions and concerns from DHS during Epic demo 261 (Approvals and Supervision), the ASI committed to hosting another demo to address all the feedback. Changes raised late in the design process could require code changes, potentially causing schedule delays or the resulting solution not meeting the business need. DHS staff attending Epic demos should be prepared with an understanding of the agreed-upon designs and policy requirements relevant to the Epic so that feedback is efficient and on point. 02/29/2024 - One demo (Epic Demo 211) was held in February as the ASI focused on developing a Go-to-Green Plan for the Project. DHS also raised concerns in Readiness meetings regarding a gap in design where eligibility is not forced to run when critical benefit data is modified on a case – which could also point to a gap in collaboration on key design decisions. 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	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 design is ok. I rec'd an email back from Joe F. that IV&V wants to meet with our reviewer to validate this.	06/14/2024 Why is this in Not Started? We had a live sprint demo for Epic 209. In addition, this should not include Epic demos. We have always had live Epic demos. Regarding SSP following the Waterfall methodology – DHS has approved all the designs, except one. We are collaborating with DHS to obtain their approval on the outstanding design. Design sessions will be scheduled as part of this process. There are 20+ people invited to the design sessions. 04/10/2024 -
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.	Hackett, Donna	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 the progress of testing might be lagging. Concerning testing coverage, 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 has 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 -DHS should request that the ASI develop a Corrective Action Plan to address the failure of prior test phases (Unit, INT) to capture defects that rolled into SIT CLOSED - 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 (Closed 4/30/2024) NOT COMPLETED - The Project team reviews the SIT exit criteria and revises them as needed to ensure UAT/FAT begins with the best system possible. (3/31/2024) IN PROGRESS - DHS and ASI monitor INT/SIT closely for both breadth and depth of testing to ensure the system is adequately tested	UAT	4	4	High	Open	6/30/2024 -Improvement of System Integration Testing (SIT) defect resolution totals addressed IVV's concern that the high number of unresolved defects would delay SIT exit. The ASI exited the SIT phase as scheduled on 6/21/2024 with 91 unresolved defects (43 medium severity and 48 low severity, or 10% of the total) compared to 352 unresolved defects at the end of May and with no unresolved critical and high-priority/severity defects. However, IVV is concerned that the project team entered Final Acceptance Testing (FAT) on 6/24/2024 without approved versions of the RTM and System Integrity Review Tool (SIRT) deliverables. While the SIRT is not a criterion for entering FAT, both the RTM and SIRT deliverables demonstrate that the BES system meets functional and contract requirements. Risk exists that testers may identify unmet contractual requirements during FAT execution that delay the Pilot or result in the need for workarounds that can compromise system usability or user satisfaction. IVV will monitor testing results and trends as the project moves through FAT execution. 5/31/2024 -On 5/9/2024, 43% (352 out of 818) of the defects identified during SIT were unresolved. Of those, there were 2 critical severity defects and 19 high severity defects. By the end of this reporting period, the percentage of unresolved defects decreased to 28% (226 unresolved out of 818 defects). IVV will monitor whether the SIT date extension, introduced as part of May's revised project schedule, improve defect resolution totals entering FAT. IVV is concerned that defects not detected in Integration Testing (INT) continue to leak into SIT, including critical and high-severity defects in numbers remaining consistently above SIT exit thresholds. This defect leakage could delay FAT completion, delay the go-live date, and/or result in incorrect benefit issuance. 4/30/2024 -Defects not detected during INT that leaked into SIT were comprised of low-level errors such as a button not being displayed, missing punctuation, duplicate fields, and data		7/12/2024 As mentioned previously, #WorldES delivered a simplified RTM to DHS to enter into FAT in order to meet the requirements Go FAT criteria. In terms of the SIRT, this is deliverable is not a criteria for entering into FAT. Please confirm with DHS. 06/14/2024 Why is this still red? It is very clear that we have full coverage of all the functionality and that we are going to make it to FAT. This should be in yellow for monitoring. 04/10/2024 - All test scripts for
82	The lack of technical documentation may lead to incorrect implementation statements or delay the System Security Plan	Heath, Dustin	Finding - Issue	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 tools 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 the system 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 draft of the SSP is scheduled to be published August 15th , 2023, and the final SSP (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.	OPEN - 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. COMPLETE - Determine when the infrastructure design baseline will be completed. (06/30/2024)	Prior to the start of the third-party assessment.	4	5	High	Open	6/28/2024 – The ASI reported that they continue to author security documentation throughout June 2024. All available documentation, such as policies or procedures cited in the system security plan (SSP), has been provided to the BES third-party security assessment team. Seventy-nine (79) documents are cited in the SSP by name. Thirty-nine (39) of those documents are either in draft form or do not exist. Of the thirty-nine (39) documents, thirty (30) documents DHS was identified as the owner, and nine (9) the ASI was recognized as the owner. Penetration testing was moved from the UAT environment to the production environment and the assessment team was ensured that production and UAT were in parity with each other. One reason to move the environment was to keep the penetration testing from interfering with final acceptance testing. The ASI reports the production environment will be available for penetration testing on July 1st, 2024. However, this delayed the penetration testing another week. The Social Security Administration (SSA) is scheduled to perform its security assessment on July 8th, 2024. 5/31/2024 - Throughout May, DHS and the ASI continued to author, update, and locate policies cited in the SSP. Additionally, the ASI is authoring procedure-related documentation needed for the Independent Security Assessment. The ASI is nearing the completion of the design of the Secure Enclave, which will house sensitive data, including federal tax information. 4/30/2024—This risk is now realized, resulting in a finding type change from a risk to an issue. DHS and the ASI continue to work on documents the security assessment team requested. Some of these documents have not been written yet or are in draft form. The Security Assessment Team requested approximately sixty (60) documents and received two documents and six lists of system inventory. Each document requested is related to implementation responses in the System Security Plan (SSP) regarding how each security or privacy control is		06/14/2024 Feedback already provided by David Rolla at May pre-meet. "My concern with the Security & Privacy slide is that there is no context provided regarding the responsibility for the majority of the documents. As we have discussed previously, DHS has thus far been unable to produce these documents, but that would not be evident to the reader without additional context." 5/11/2024 Feedback already provided by David Rolla at pre-meet. "My concern with the
80	Development delays have negatively impacted the project schedule and delayed go-live.	Fors, Michael	Finding - Issue	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 • 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 • 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. • ASI regularly report estimated story points for the total remaining project work to reach go-live and present a dynamic burndown chart to track the progress. • The ASI should consider enhancing the depth of developer unit testing. 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 development, analysis, and other 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) ASI consider taking steps to increase code quality, including enhancing the depth of developer unit testing, tracking and proactively preventing leakage, and enforcing effective coding standards and good governance.	Immediate	3	3	Med	Open	06/30/24 - The ASI adjusted how they calculate velocity to provide greater transparency on the level of progress. The ASI is creating burndown charts to provide greater visibility/clarity into their development productivity and progress. The Project continues to be challenged with high defect rates which pose code quality risks that could delay go-live. 05/31/24 - The ASI adjusted how they calculate velocity to provide greater transparency on the level of progress they're making. The ASI is elevating the planned story points per sprint to motivate developers to be more productive even though the planned goal may not be realistic or achievable. While this approach may benefit the development team, it obfuscates their true productivity and whether the team is getting better at estimating (a key Agile methodology objective). IVV recommends that the ASI work to improve their estimates to provide realistic timelines, avoiding continual re-baselining of schedule and providing stability in dates for DHS tasks. The ASI may wish to consider whether they keep their developer "stretch" story point goals separate from what's reported to the customer, executive stakeholders, and project leadership. IVV recommends the ASI enhance their executive reporting by providing a clear perspective on their productivity/velocity and remaining work (e.g. via Burn-down charts). 04/30/24 - The ASI reported a decline in velocity, as the last 5 sprints show significant drops in actual vs. planned completed work. The ASI has reported that the lack of productivity resulted from many bugs, leading to rework. IVV remains concerned that inadequate unit testing might contribute to this issue, potentially causing avoidable rework and increased technical debt, thereby impeding overall productivity. In the most recent sprint (#32), the development team completed 36 out of 63 story points, resulting in a 43% shortfall. Continued shortfalls will increase the likelihood of development delays affecting the go-live. 03/31/24 - To address this issue, the ASI reported they built the revised BES		05/11/2024 As discussed at pre-meet, the development team has been primarily focused on fixing BES 1.0 defects. DDI work for BES 1.1 and 1.2 are forthcoming.

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
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 based on the project teams past performance and resources available to do the remaining work. - ASI conduct a Root Cause Analysis (RCA) with DHS and IVV to determine why the BES project continues to experience schedule delays. - ASI Project Management works with the development teams to evaluate the accuracy of development velocity and adjust accordingly to reduce risk in the revised BES project schedule. •ASI provides Burndown charts that provide visibility into the remaining work. NOT COMPLETED - ASI provide details on how Velocity measures were used to calculate the remaining development 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 DH S 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. 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	Immediate	3	4	High	Open	06/31/2024 - The Project's ability to perform according to the approved BES Project Schedule continues to be a high risk. The ASI completed their schedule reviews with DHS and IVV, baselining the schedule on 06/19/2024. IVV continues to monitor a schedule that has seen six (6) delays to the Pilot and Statewide Go Live dates since the BES 2023 restart in February 2023, with two (2) eight-week delays introduced in March and May of this year. The original Pilot start was 01/02/2024, with Statewide Go-live on 04/01/2024. Based on the schedule published on June 29, 2024, Pilot starts on 09/16/2024, and the Statewide Go-live is on 02/10/25. 05/30/2024 – The ASI released a revised schedule that may reduce DHS/IVV concerns. The draft schedule was under review at the end of this reporting period. The revised schedule has three key deliverables (Requirements, Traceability Matrix (RTM), System Integrity Review Tool (SIRT), and Validated Results of Data Conversion Testing) scheduled from June 7 – 14, which could be a resourcing challenge for DHS. IVV shared the DHS resourcing challenge with the ASI on May 31st and the ASI responded immediately that they would address it at the next Schedule Review Meeting on June 5, 2024. IVV will continue to monitor the project team's ability to meet this schedule and for any new or re-introduced risks that could impact the go-live dates. 4/30/2024 - Several tasks have been delayed in the project schedule - some (i.e., data conversion) more than 20 days. Additionally, the HANA/BES integration (Epic 209), scheduled to enter SIT on April 15, was in development at the end of the month. IV&V is concerned that under-estimated level of effort on tasks in an aggressive schedule could impact go-live dates 3/31/2024 - The BES Project Schedule that aligns with the Go to Green plan was published by the ASI during this reporting period. The overlap of Integration Testing (INT) and SIT, and adding functionality into SIT after it has started may lead to more delays as seen in prior schedules.		7/12/2024 The update for this finding does not reflect current status of the Primary/DDI project schedule(s). 6/14/2024 An email stating the concern regarding the deliverable timing was sent by PCG at 4:47 pm on May 31st. I responded within the hour stating we will look at adjust the dates at the schedule review meeting, which we did. I do not think this should be identified in May's report. Meetings were still underway to adjust the updated schedule.
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	6/20/24 - No material update for this reporting period. 5/31/24 - It remains unclear how infrastructure complexity will impact DR testing and execution. 4/30/24 - No material update in this reporting period. 3/31/24 - During a recent Change Control Board (CCB) meeting the ASI presented DHS with a for-cost change request (CR) to the design of the Secure Enclave (the addition of roles). In the CCB, it was clear that DHS and the ASI were not in agreement regarding the funding of this change request. 2/29/24 - No material update in the reporting period. 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. IVV continues to monitor this finding. 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 has reported they are 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		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 that would provide oversight of 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	6/20/24 - No material update for this reporting period. 5/31/24 - IVV has yet to receive a detailed, comprehensive list of configuration items the ASI will be tracking. 4/30/24 - IVV has yet to receive a detailed, comprehensive list of configuration items the ASI will be tracking. 3/31/24 - Responsibility for the Configuration Management Plan (CMP) reverted to the ASI (previously, the DHS Security Contractor was updating the CMP for related security controls). The ASI is resuming this scope of work at a time when its resources are stretched and may lead to CMP and configuration management quality challenges. 2/29/24 - No material update in this reporting period. 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 IVV. 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 to respond. 8/31/23 - No material update. 7/31/23 - No material update. 6/30/23 - No material update. 5/31/2023 - 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		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