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April 15, 2024

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

The Honorable Scott K. Saiki
Speaker and Members of the
House of Representatives
Thirty-Second State Legislature
State Capitol, Room 431
Honolulu, Hawaiʻi 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 Hawaiʻi, 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 (Apr 15, 2024 11:17 HST)

Douglas Murdock
Chief Information Officer
State of Hawaiʻi

Attachments (2)

Hawaii Department of Human Services Systems Modernization Project

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

*Submitted: April **12, 2024***

PUBLIC CONSULTING GROUP

Solutions that Matter

Overview

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Executive Summary

Executive Summary

The ASI delivered an updated BES Project Schedule that aligns with the approach to the BES Implementation modified in the Go to Green plan, resulting in a 2-month implementation delay for statewide Go-Live and a 6-month delay for functionality included in the Post-Statewide Go-Live. The level of risk to the BES Project was evaluated in this month's report based on the availability of data to IV&V regarding these key changes:

- The BES project schedule continues to be aggressive with minimal slack (extra) time to absorb unexpected delays without impacting the Go-Live dates. The ASI added one week of slack between Final Acceptance Testing and Pilot and another week of slack between Pilot and Statewide Go-Live.
- The proposed three-phased implementation approach adds complexity to the Project and requires additional project and technical management engagement and coordination. Concurrent development and testing phases create a risk to DHS in the form of rework (e.g., testing functionality as new code is added, retesting to ensure the new code does not negatively impact existing functionality, and managing defects across multiple testing phases).
- Executing the project schedule is straining project resources and the management of the phases adds to the effort.

The DHS and ASI project teams are committed to this Project and intend to deliver a quality product without creating further delays or shifting additional functionality post-pilot to meet the go-live targets.

Jan	Feb	Mar	Category	IV&V Observations
H	H	H	Project Management	This category continues to be red due to overlapping development and testing phases and IV&V's lack of insight into the ASI methodology used to support revised estimates for completing the remaining work. The ASI intends to provide its methodology to IV&V in the next reporting period.

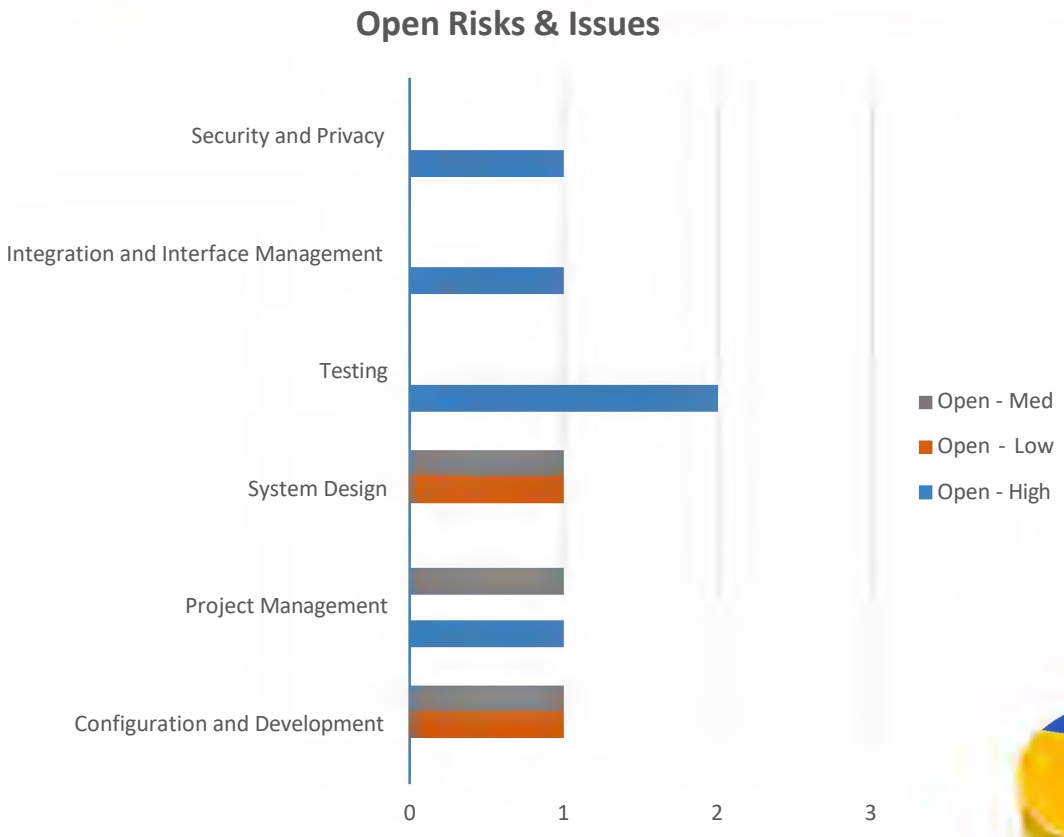
Executive Summary

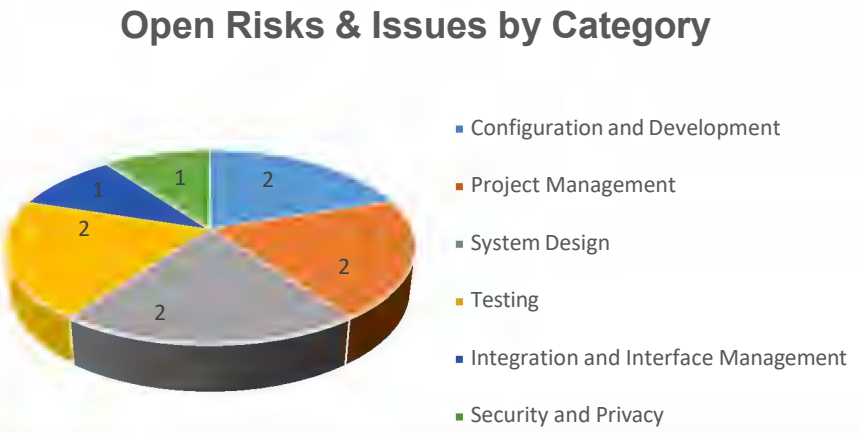
Jan	Feb	Mar	Category	IV&V Observations
M	M	M	System Design	DHS design feedback for Epic demo 261 (Approvals and Supervision) will require another demo to validate the changes made by the ASI. If this becomes a trend with other Epics, delays to Pilot and other milestones may occur.
M	M	M	Configuration and Development	As part of the ASI's Go to Green plan, they plan on implementing revised processes to improve code quality. IV&V will evaluate once we receive factual data from the ASI reporting the results of these changes.
H	H	H	Integration and Interface Management	IV&V is reviewing the draft Interface testing plan, we will evaluate the criticality of this category after our review is complete.
H	H	H	Testing	The Project entered into System Integration Testing (SIT) without approved test scripts for some Epics that will be phased into SIT after testing begins. IV&V is concerned that phased-in functionality may require retesting and could extend the testing duration.
H	H	H	Security and Privacy	The necessity to complete the 3rd Party Security Assessment before Pilot places significant pressure on DHS and the ASI to complete, test, and implement all required security documents, processes, and procedures This will remain a high-criticality category until the required security documentation is complete.

IV&V Findings and Recommendations

IV&V Findings and Recommendations

As of the March 2024 reporting period, PCG is tracking 10 open findings (4 risks, 6 issues) and has retired a total of 73 findings. Of the 10 open findings, 5 are High, 3 are Medium, and 2 are Low.





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).

IV&V Findings and Recommendations

Findings Retired During the Reporting Period

#	Finding	Category
	None	

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 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.	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 provide details on how Velocity measures were used to calculate the remaining development work.	Incomplete
• ASI conduct a Root Cause Analysis (RCA) with DHS and IV&V to determine why the BES Project continues to experience schedule delays.	Not Started
• ASI Project Management works with the development teams to evaluate the accuracy of Velocity and adjust accordingly to reduce risk in the revised BES project schedule.	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'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.	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
63	**Issue – The lack of early planning and coordination with interface partners may result in schedule delays.** DHS and IV&V are currently reviewing the draft Interface Test Plan published by the ASI this month; we will provide an update on this issue in the next report.	H

Recommendations	Progress
• 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
	Risk – Insufficient configuration management could lead to development confusion and reduce the effectiveness of defect resolution.	
70	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.	

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.** To address this issue, the ASI reported they built the revised BES Project Schedule with some slack/float time. IV&V is researching Data Conversion and the impact, if any, it had on the most recent Schedule delay. The conversion team has some remaining data elements to map. They reported that the full scope of 'data cleansing' may not be complete before converting the data. IV&V is continuing to research and plans to provide an update in a future report.	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.** 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.	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.** 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.	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

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.** DHS and the ASI entered into BES 1.0 SIT on 3/15/2024 without approved test scripts for several Epics that will be phased into SIT after testing begins. The phased introduction of test scripts can negatively impact testing and reduce the time available to identify and fix defects within scheduled timeframes. IV&V review of test scripts shows that quality could be improved by adding additional details or steps to the test scripts to verify test coverage.	

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.	Not Complete
• 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.** On 3/15/2024, DHS and the ASI agreed to enter SIT for BES 1.0 without meeting the criteria for a complete test script package documented in BI-19 Complete and Final Test Plan. IV&V is concerned that starting SIT without the complete and approved SIT Test Script package may lead to schedule delays. The updated schedule reflects an overlap of BES 1.0 INT and SIT efforts which could result in resource constraints. Testing also overlaps across releases (BES 1.0 and BES 1.1) which adds complexity and risk when maintaining and coordinating code across multiple test environments.	

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).** During March, the DHS/ASI security teams focused on documentation and the Tenable Nessus scans on the base BES Production environment (without the Secure Enclave). The Secure Enclave is not included in the BES 1.0 Core Release and will not be part of Pilot. Therefore, the upcoming 3rd party security assessment will not include the Secure Enclave. Security documents (e.g., data flow, network diagrams, Plan of Actions and Milestones (POAMs), and procedural documents such as Change Management procedures) may not be complete for the 3rd party assessment starting in April, which may result in potential findings and POAMs for remediation if not available. Additionally, DHS reported that several DHS Security and Privacy policies were not updated in the past 365 days as required by NIST 800-53.	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	Jan	Feb	Mar	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 February 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 March reporting period:
  - Completed – February 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 April 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	03/13/2024, 03/20/2024, 03/27/2024	N/A
BI-5 Project Schedule - BES 2023 DDI	03/13/2024, 03/20/2024, 03/27/2024	N/A
Interface Test Plan	3/20/2024	N/A
M & O Project Schedule	3/25/2024	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
Jira Requirements Details	N/A	N/A
Jira Testing Lists	N/A	N/A

Additional Inputs

Meetings and/or Sessions Attended/Observed:

1. IV&V Team Meeting – 3/1/2024, 3/7/2024, 3/11/2024, 3/14/2024, 3/18/2024, 3/21/2024, 3/25/2024, 3/28/2024
2. IV&V February 2024 Pre-Draft MSR Findings Review – 3/7/2024
3. HI DHS BES January Draft IV&V Report Review – 3/13/2024
4. Bi-Weekly DHS and IV&V Touch Base – 3/5/2024, 3/19/2024
5. Weekly BES Infrastructure meeting – 3/1/2024, 3/8/2024, 3/15/2024, 3/22/2024
6. DHS/IV&V Check-in – 3/14/2024, 3/28/2024
7. Weekly Client BES 2023 Project Status Meeting – 3/13/2024, 3/20/2024, 3/27/2024
8. Security Touchpoint – 3/6/2024, 3/13/2024, 3/20/2024, 3/27/2024
9. Weekly Data Conversion Workgroup – 3/7/2024, 3/14/2024, 3/21/2024
10. (External - Epic demo) Epic 261 Approvals and Supervision / Epic 241 Eligibility..– 3/1/2024
11. (External) Weekly Interfaces Touchpoint – 3/4/2024, 3/11/2024, 3/18/2024, 3/25/2024
12. (External) Readiness - Working Group Meeting – 3/5/2024, 3/12/2024, 3/19/2024
13. (External) Bi-Weekly Client BES 2023 Schedule Review/Status – 3/27/2024
14. (External) Bi-weekly BES CCB Meeting – 3/6/2024, 3/20/2024
15. (External) BES: FNS Connect – 3/14/2024
16. (External- Epic Demo) Epic 284 Process Case Changes, Renewals, and SMRFs– 3/1/2024
17. (External) C!A Current Weekly Checkpoint– 3/5/2024, 3/12/2024, 3/19/2024
18. (External-Epic Demo) Epic 239 Payment Processing– 3/8/2024
19. (External) BES M&O Migration Kickoff Meeting– 3/11/2024
20. (External - Pre-design) TANF Data Extract - Epic 286– 3/6/2024, 3/13/2024,
21. (External) BES 1.0 SIT Go/No-Go Meeting – 3/15/2024
22. (External - Epic Demo) Epic 257 Interview and Application and Epic 241 Eligibility Determination – 3/15/2024
23. (External) BES BI-05 Project Schedules Responses Review Meeting - cont'd – 3/18/2024
24. (External) BES M&O Project Status Meeting – 3/18/2024, 3/25/2024
25. (External - Epic Demo) Epic 230 Repatriate, Refugee, and Asylee/ Special Circumstance Allowances / D-SNAP/Manual Benefits – 3/28/2024
26. (External - Epic demo) Epic 238 Claim Setup and Maintenance – 3/28/2024
27. (External-Epic Demo) Epic 249 Automated Case Monitoring – 3/28/2024

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
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.	- 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. - The plan to complete BES implementation does not include overlapping testing phases	Now	4	5	High	Open	3/31/2024 - On 3/15/2024, DHS and the ASI agreed to enter SIT for BES 1.0 without meeting the criteria for a complete test script package documented in BI-19 Complete and Final Test Plan. IVV is concerned that starting SIT without the complete and approved SIT Test Script package may lead to schedule delays. The updated schedule reflects an overlap of BES 1.0 INT and SIT efforts which could result in resource constraints. Testing also overlaps across releases (BES 1.0 and BES 1.1) which adds complexity and risk when maintaining and coordinating code across multiple test environments. 2/22/2024 - During the February 21, 2024, Weekly Project Status Meeting and February 28, 2024, BES Schedule Review Meeting, the ASI introduced and detailed the draft Go-to-Green plan. However, edits to the plan continue and final DHS approval is outstanding. The draft Go-to-Green plan indicates an ongoing overlap of development and testing activities as functionality will be phased into pilot and statewide rollout. System Development Best Practices recommend no testing phases be overlapped because of the amount of rework and instability this causes to the project team and solution. 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'.		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 the Client Correspondence tests that were being reviewed by DHS for approval.
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 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.	• 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. • 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. • Actively monitor tester 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.	Now	3	3	Med	Open	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 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.		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".
86	Limited collaboration between the ASI and DHS in the design process could lead to BES usability issues and functionality 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.	OPEN - 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. 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)	Now	4	3	Med	Open	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 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-	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 emal back from Joe F. that IV&V wants to meet with our reviewer to validate this.	04/10/2024 - eWorldES disagrees with the current finding update.Epic demo attendees not involved with Sprint demos or planning sesssions are providing feedback. DHS SMEs are involved from the get-go. DHS is not having internal conversations or reading design documents. DHS should be having internal meetings to discuss policy. 10/31/2023 - Vic - Conversations with BES PMO about live demos. Will keep as recorded demos, but we addressed
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 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. NOT COMPLETE - The Project team reviews the SIT exit criteria and revises them as needed to ensure UAT/FAT begins with the best system possible. (Closed 3/31/2024)	UAT	4	4	High	Open	3/31/2024 -DHS and the ASI entered into BES 1.0 SIT on 3/15/2024 without approved test scripts for several Epics that will be phased into SIT after testing begins. The phased introduction of test scripts can negatively impact testing and reduce the time available to identify and fix defects within scheduled timeframes. IVV review of test scripts shows that quality could be improved by adding additional details or steps to the test scripts to verify test coverage. 2/21/2024 - Entry into Release 12 SIT is delayed, the ASI is currently rescheduling the start date. A complete Release 12 SIT script package continues to be developed with 301 test scripts approved and ready for SIT and 886 test scripts pending review or in draft status. With a large number of test scripts pending and an undetermined SIT entry date, the risk of further delays remains high. Without the continuation of the comprehensive peer review of SIT test scripts, the risk of testing gaps remains high. 1/31/2024 - 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. 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		04/10/2024 - All test scripts for phased in epics are going through the same review process. We will not test scripts that are not reviewed and approved by DHS. The nine epic reference is incorrect. There were a few epic SIT Client Correspondence scripts not approved by DHS when a SIT go decision was rendered which was accepted by DHS. eWorldES is not aware of any gaps in test coverage and recommends PCG provide more details supporting this claim. Nicole and Donna to meet to review INT/SIT test script process.

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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 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.	- 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	03/30/2024 – During March, the DHS/ASI security teams focused on documentation and the Tenable Nessus scans on the base BES Production environment (without the Secure Enclave). The Secure Enclave is not included in the BES 1.0 Core Release and will not be part of Pilot. Therefore, the upcoming 3rd party security assessment will not include the Secure Enclave. Security documents (e.g., data flow, network diagrams, Plan of Actions and Milestones (POAMs), and procedural documents such as Change Management procedures) may not be complete for the 3rd party assessment starting in April, which may result in potential findings and POAMs for remediation if not available. Additionally, DHS reported that several DHS Security and Privacy policies were not updated in the past 365 days as required by NIST 800-53. 02/29/2024 – The security staff resolved issues in the Google Assured Workloads services for the Secure Enclave. The ASI continues to remediate findings from the vulnerability and compliance scans on the environment and work through issues related to the Tenable Nessus credentialed scanning. The security team rescheduled the due dates for the supporting security and privacy documentation for the SSP and intends to be completed by March 4th, 2024. Since there is a proposed schedule change in the project's "Go-To-Green Plan", this finding remains a risk instead of being elevated to a realized issue. 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.		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,
80	Development delays could negatively impact the project schedule and delay 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 • 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 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)	Immediate	3	3	Med	Open	03/31/24 - To address this issue, the ASI reported they built the revised BES Project Schedule with some slack/float time. IVV is researching Data Conversion and the impact, if any, it had on the most recent Schedule delay. The conversion team has some remaining data elements to map. They reported that the full scope of 'data cleansing' may not be complete before converting the data. IVV is continuing to research and plans to provide an update in a future report. 02/29/24 - The ASI reported additional delays that will push out Go-Live to October 2024, based on the draft Go-to-Green plan. The ASI reported the Root Causes of this delay include - - Excessive defects, - Lack of Code quality with downstream impacts to include additional defects and critical blockers causing delays with Sprint and Epic demos and the completion of Integration Testing, - Development delays with the Hana/BES interface and Secure Enclave. The draft Go-to-Green plan includes reorganizing the development team to have more experienced developers focus on critical defects and consistent enforcement of development standards across all development teams and other process improvements. 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		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 based on the project teams past performance and resources available to do the remaining work. - ASI provide details on how Velocity measures were used to calculate the remaining development 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 Velocity and adjust accordingly to reduce risk in the revised BES project schedule. 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. 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	Immediate	3	4	High	Open	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. 2/29/2024 - The Project has experienced many delays, the most recent of which was a four-week delay announced the end of January and the draft Go-to-Green Plan is adding another six months. 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 the ASI reported they were developing a Go-to-Green Plan. Further delays may be imminent. IVV 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		04/10/2024 - Please confirm the description of this issue is still relevant. The overlap of testing is not unique to software development projects. What does "...adding functionality into SIT after SIT started continues to persist in the BES Project schedule. With the continuation of this approach to developing the project schedule." mean? Outside of the updates made to the BES project schedules per the G2G, there are no plans to continue adding functionality to SIT.
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	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 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		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.

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
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	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 ServiceNow, will be building up instances. Ongoing support and main. Dont' think still a risk, IVV 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 will be the best		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
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	3/31/2024 - DHS and IV&V are currently reviewing the draft Interface Test Plan published by the ASI this month; we will provide an update on this issue in the next report. 02-29-2024 - The MOU/MOAs were completed and the Interface Control Documents (ICD) are updated. The interface testing team did not produce the testing plan on February 16th as specified in the draft Go-to-Green plan. 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		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