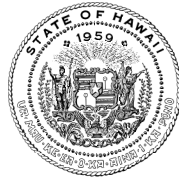JOSH GREEN, M.D.
GOVERNOR
KE KIA'ĀINA

KEITH A. REGAN
COMPTROLLER
KA LUNA HO'OMALU HANA LAULĀ

CHRISTINE M. SAKUDA
CHIEF INFORMATION OFFICER
LUNA 'ENEHANA

STATE OF HAWAI'I | *KA MOKU'ĀINA O HAWAI'I*
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES | *KA 'OIHANA LOIHELU A LAWELAWE LAULĀ*

OFFICE OF ENTERPRISE TECHNOLOGY SERVICES | *KE'ENA HO'OLANA 'ENEHANA*
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

November 19, 2024

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

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

Aloha Senate President Kouchi, Speaker Nakamura, 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,

Christine M. Sakuda
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: October 1 – 31, 2024

Submitted: November 15, 2024

PUBLIC CONSULTING GROUP

Solutions that Matter

Overview

PUBLIC CONSULTING GROUP

Solutions that Matter

Executive Summary

Executive Summary

In the month of October, DHS and the ASI continued to evaluate options for completing the BES project. DHS and the ASI are evaluating an approach, which includes one release that will contain all the functionality DHS needs to perform eligibility and enrollment, including enhancements to address requirements changes that occurred since the project started in 2018.

IV&V has focused attention on the planning efforts in the following areas.

- ASI testing—Vendor challenges with testing functionality completely and comprehensively have led to multiple project delays. DHS and the ASI need to fundamentally change their approach to testing and improve the criteria for exiting a testing phase. Continuing the same process would be expected to result in more delays. Testing converted data is a key part of IV&V's focus, as the ASI needs to validate that the BES functionality works with converted cases before DHS is expected to test.

- Requirements Traceability Matrix (RTM) - Understanding the contractual requirements that have been met and those that are outstanding will be key to the replanning efforts. With multiple enhancements also in discussion, the RTM can help inform the discussion of what functionality can be delivered within Pilot and Go-Live and what can be deferred to reduce the remaining duration of the project.

- Root Cause Analysis (RCA) – Despite multiple extensions and re-baselining of the project schedule, the BES project continues to encounter schedule delays. To break the cycle of project delays, DHS and the ASI should perform a joint critical analysis of the project to determine the root cause of the delays. A collaborative process between DHS and the ASI is recommended over an ASI internal analysis that DHS has no visibility into.

- BES Project schedule – No updated schedule was released in October. The project timeline depends upon the BES scope that DHS and the ASI agree to and that FNS will approve. The enhancements that DHS determines "must-have" are needed to complete the revised schedule, which will also determine the eventual Pilot and Go-Live dates.

The current project delay was driven by the inability to complete UAT due to the high number of defects, phased in functionality not being ready for UAT, and DHS determining they have enhancements that are required for Pilot and Statewide Implementation. With this occurring so close to the planned BES 1.0 Pilot, the project team is at risk of burnout and low morale with the project's completion. DHS and the ASI executive support have been important in guiding the project through past challenges and are actively engaged in supporting the project team as the project replanning continues.

Executive Summary

| Aug	Sept	Oct	Category	IV&V Observations
H	H	H	Project Management	The ASI and DHS PMO continued to evaluate the scope to be included in the restarted project, along with reviewing options for the revised schedule. The ASI also provided details on a switch in development methodology, from Agile to Waterfall.
L	L	L	System Design	No design sessions were held in the reporting period. The offline design work that occurred continued to revise the Functional Designs for BES 1.0 functionality.
M	M	M	Configuration and Development	The ASI senior developer hired last month to improve code quality left the company this month. In October, the ASI hired two new resources to continue the focus on code quality improvement. Two other development resources are validating that adequate unit testing is being performed.
L	L	L	Integration and Interface Management	The ASI and DHS are discussing options for testing partner interfaces. As Project Risk 59 has called out, the current plan for using mock data introduces risk to the interface testing.
H	H	H	Testing	UAT testing resumed on October 14, after taking a two-week break to allow ASI to focus on defect resolution. DHS requested that UAT end on November 30, although as of October 30, there remained 373 unresolved defects (123 high severity, 177 medium severity) which could lead to a high number of defects being carried over to the future Pilot UAT.
H	H	H	Security and Privacy	Due to the high number of Critical and High items in the Plan of Action and Milestones (200+) to be remediated, and the challenges with the Secure Enclave meeting IRS security requirements, IV&V is concerned about the results of the IRS requirements to assess system risks, as agreed upon between DHS, eWorld, and the IRS during the meeting with the IRS on October 15th, 2024.
M	M	M	Requirements Analysis & Management	DHS has requested that a complete Requirements Traceability Matrix (RTM) be provided for BES 1.0 so they can determine what contractual requirements are met by that release versus what still needs to be completed in the Project.

IV&V Findings and Recommendations
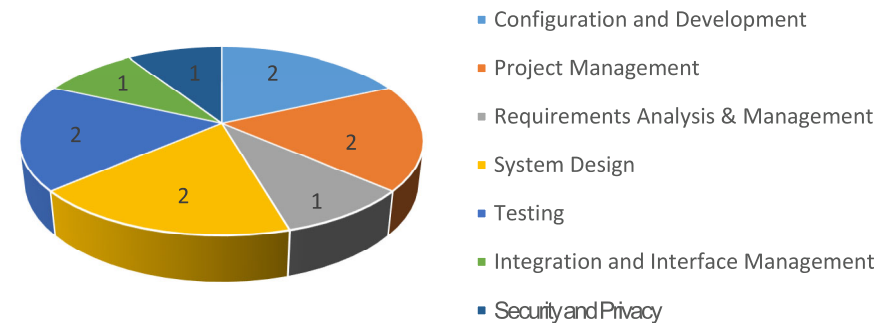
IV&V Findings and Recommendations

As of the October 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, 3 are Medium, and 4 are Low.
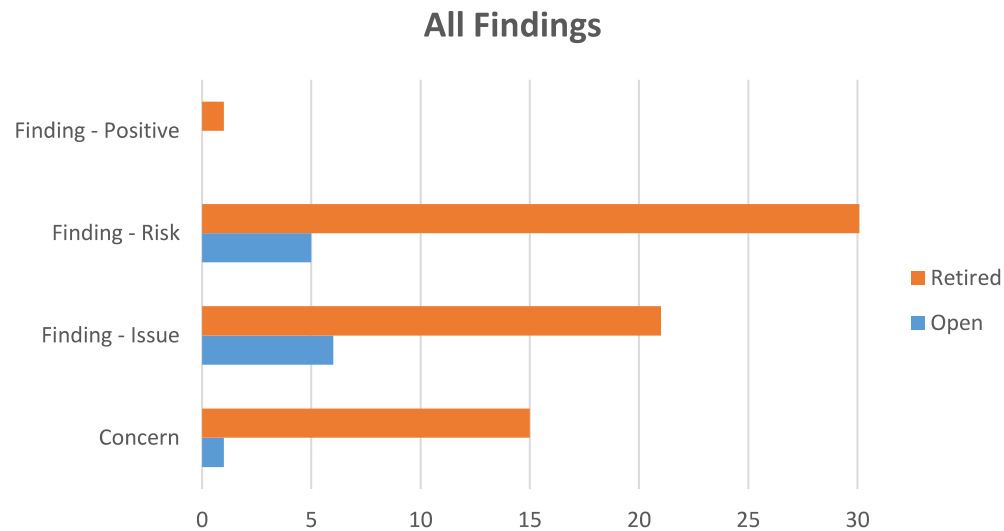

Open Risks & Issues
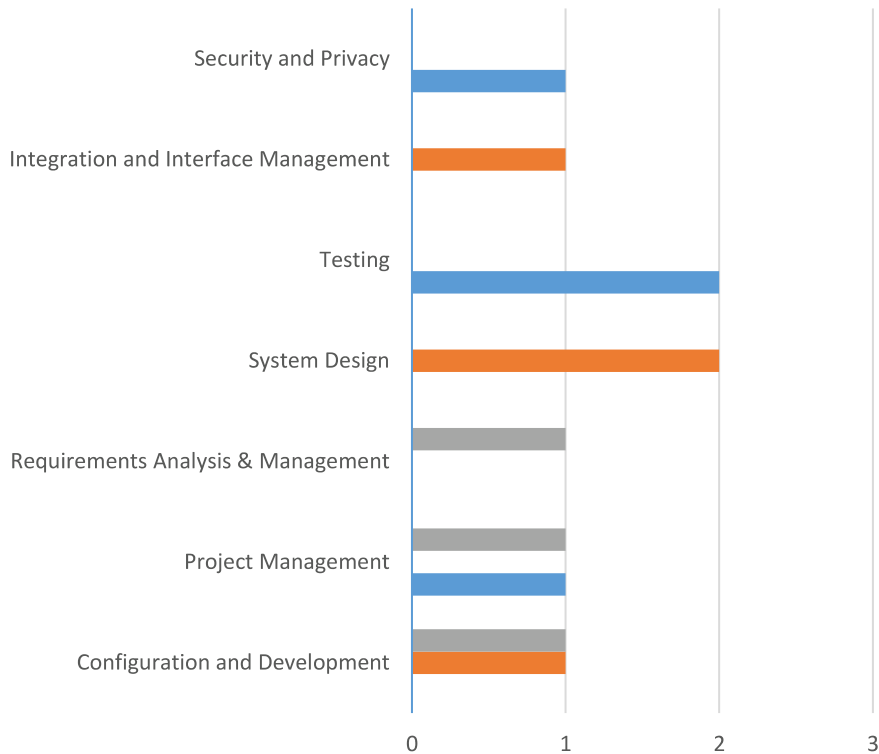
Open Risks & Issues by Category

IV&V Findings and Recommendations

The following figure provides a breakdown of the 88 IV&V findings (positive, risks, issues, concerns) by status (open, retired).

All Findings

IV&V Findings and Recommendations

Findings Retired During the Reporting Period

#	Finding	Category
	None	

IV&V Findings and Recommendations

Preliminary Concerns Investigated During the Reporting Period

#	Finding	Category
98	**Delays in providing the required deliverables to FNS could extend the review time needed and delay FNS's concurrence to start the pilot.** This finding will be reevaluated by the IV&V team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout.	Project Management

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.** This finding will be reevaluated by the IV&V team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout.	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

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.** This finding will be reevaluated by the IV&V team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout.	M

Recommendations	Progress
• Increase OCM efforts to effectively manage user, general public, and legislative expectations for the 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 UAT 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.	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.** This finding will be reevaluated by the IV&V team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout.	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
• Improve rigor in the Design process by verifying all impacted policy and DHS SMEs are involved and approve the design to avoid extensive defects and gaps in functionality that may trigger the need for a change request.	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.** This finding will be reevaluated by the IV&V team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout	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.** This finding will be reevaluated by the IV&V team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout.	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

IV&V Findings and Recommendations

Configuration and Development

#	Key Findings	Criticality Rating
80	**Issue – Development delays have negatively impacted the project schedule and delayed go-live.** With the recent departure of the ASI's recently hired development quality lead, the ASI hired two technical resources to mitigate code quality challenges that have created project delays.	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.	In process
• The ASI should consider enhancing the depth of developer unit testing.	In process

# IV&V Findings and Recommendations

Integration and Interface Management

#	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.** This finding will be reevaluated by the IV&V team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout.	L

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.** As of October 30, 2024, DHS testers identified a total of 1618 defects with 373 defects still unresolved, comprising 123 High Severity, 177 Medium Severity, and 73 low severity defects. The ASI resolved and moved to UAT 175 defects during the two-week UAT testing pause. Despite this progress, significant gaps remain. 20% (137/682) of real-time environment test cases and 49% (205/417) of time travel environment test cases are unresolved. This poses significant risks, potentially compromising system reliability, performance, and quality. Unresolved defects and incomplete testing may lead to undiscovered issues, impacting overall system integrity.	H

Recommendations	Progress
• Monitor INT/SIT closely for both breadth and depth of testing to ensure the system is adequately tested.	Completed
• ASI utilize the two-week UAT testing pause to address and resolve outstanding SIT defects and apply the fixes in the UAT environment, ensuring that these defects do not recur when UAT resumes, optimizing testing efficiency and reducing potential defect rediscovery.	Completed
• DHS and ASI revisit the testing approach to prioritize completion of remaining test activities and conduct comprehensive System Integration testing (SIT) to minimize defect leakage to User Acceptance Testing (UAT).	New
• ASI assesses the potential impact of the large number of unresolved defects on future development efforts, ensuring a more robust and efficient development process.	New

IV&V Findings and Recommendations

Testing

	Key Findings	Criticality Rating
89	**Issue—The current mitigation approach to completing the development of the remaining Epics is condensed and aggressive, which may increase the likelihood of schedule delays, quality issues, and a higher volume of testing defects.** The project team has announced further delays in the dates for Pilot and Go-Live and agreed to combine BES 1.0 and BES 1.1 into one release. Based on the 10/30/2024 project status meeting, the development for Epic 203 (Report Viewing and On-demand Submission) has been delayed, and the due date has been changed from 10/4/2024 to 1/14/2025. The due date for Epic 243 (Reports – Priority 2, Set #1) and Epic 244 (Reports – Priority 2, Set #2) has been updated from 10/4/2024 to 11/1/2024. IV&V expresses concerns that the upcoming new schedule may retain or increase concurrent activities, making it challenging to manage and coordinate multiple tasks simultaneously. This may compromise the project's ability to complete testing and other essential activities, ultimately impacting the Pilot and statewide Go-Live dates.	H

Recommendations	Progress
• Develop Contingency Plans if the mitigation plan continues to see slippage affecting INT and SIT.	In process
• The ASI provides INT results and SIT scenarios for incomplete Epics to DHS for review/approval ahead of SIT execution.	Completed
• 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).** In October, the ASI continued to work on rewriting the implementation statements for the BES System Security Plan (SSP). The ASI completed rewrites of implementation statements of five of twenty control families in the main body of the SSP. The ASI has completed the basic infrastructure for the Secure Enclave, however, there is confusion about what has been completed in the Secure Enclave and when it will be done. Applications that need to work within the Secure Enclave must be configured to work within the explicit security requirements placed on the Secure Enclave. These configurations may require vendor support or may not work within an environment with IRS Publication 1075 security requirements. IV&V remains concerned about the IRS Assessment due to the large number of critical and high Plans of Action and Milestones (POAMs) that remain to be remediated by both DHS and the ASI. Currently, eight (8) POAMs have been remediated, while over two hundred (200) critical and high POAMs remain open.	H

Recommendations	Progress
• 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
• Begin monthly Plan of Action and Milestone update meetings between DHS Security and the ASI Security teams to inform each other of progress and updates made against each POAM.	Completed
• Include the Secure Enclave within the work breakdown structure along with the known tasks related to the IRS Assessment to continue receiving FTI in BES.	Not Started

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.** This finding will be reevaluated by the IV&V team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout.	M

Recommendations	Progress
• Develop a document that provides DHS with a feasible and effective way to map contract requirements to passed test cases, and, per the BI-19 (Complete and Final Test Plan),"Maps the implementation, 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	Aug	Sep	Oct	Comments
IV&V Budget	🟢	🟢	🟢	
IV&V Schedule	🟢	🟢	🟢	
IV&V Deliverables	🟢	🟢	🟢	PCG submitted the final September IV&V Monthly Status Report.
IV&V Staffing	🟢	🟢	🟢	Rylan Kanae left the IV&V team on October 9, 2024
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 October reporting period:
    - Completed – September Monthly Status Report
    - Ongoing – Review the BES Project Artifacts and Deliverables
    - Ongoing – Attend BES Project meetings, (see [Additional Inputs](#) pages for details)
    - Ongoing – Review available ASI contracts and contract amendment documentation
- Planned IV&V activities for the November 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
None in the reporting period		

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
UAT Testing Dashboard	N/A	N/A
Waterfall Methodology Plan	N/A	N/A

Additional Inputs

Meetings and/or Sessions Attended/Observed:

1. IV&V Team Meeting – 10/3/2024, 10/7/2024, 10/10/2024, 10/15/2024, 10/15/2024, 10/21/2024, 10/24/2024, 10/28/2024, 10/31/2024
2. IV&V/ASI September Pre-draft Review – 10/7/2024
3. HI DHS BES August Draft IV&V Report Review – 10/11/2024
4. Bi-Weekly DHS BES PMO/IV&V Check-in – 10/10/2024, 10/24/2024
5. Weekly BES Infrastructure meeting – 10/4/2024, 10/11/2024, 10/18/2024
6. Weekly Client BES 2023 Project Status Meeting – 10/9/2024, 10/16/2024, 10/25/2024, 10/30/2024
7. Security Touchpoint – 10/2/2024, 10/9/2024, 10/16/2024, 10/23/2024, 10/30/2024
8. (Externa(l) Weekly Interfaces Touchpoint – 10/7/2024, 10/18/2024, 10/28/2024
9. (External) Readiness - Working Group Meeting – 10/8/2024, 10/22/2024
10. (External) Bi-weekly BES CCB Meeting – 10/2/2024, 10/16/2024, 10/30/2024
11. (External) C!A Current Weekly Checkpoint– 10/8/2024
12. eWorld/IV&V Mid-Month Check-in – 10/17/2024
13. (External) BES M&O Project Status Meeting – 10/7/2024, 10/21/2024, 10/28/2024
14. (External) BES Snow Touchpoint – 10/2/2024, 10/16/2024, 10/23/2024
15. (External) BES UAT Daily Touchpoint – 10/15/2024 – 10/31/2024 (daily call)
16. (External) BES UAT Daily Defect Status Meeting – 10/15/2024 – 10/31/2024 (daily call)
17. (External) BES Waterfall Methodology Decision Discussion – 10/18/2024
18. (External) BES Enhancement Change Requests Initial Business Review Meeting – 10/23/2024

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
- Data Management and Conversion

- 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
98	Delays in providing the required deliverables to FNS could extend the review time needed and delay FNS's concurrence to start the pilot.	Molina, Brad	Concern	7/24/2024	Project Management	Not all the documents that FNS is required to review have been provided. In the weekly Readiness meeting on 7/23, it was mentioned that FNS is at its year-end, so its workload is backing up, which might require its document review to take the full 60 days. The longer DHS delays getting deliverables to FNS, the closer it gets to the planned start for Pilot.	The BES pilot cannot start without FNS's concurrence. Therefore, it's critical the project team deliver the required deliverables to FNS as soon as possible so FNS has the necessary time to review and give the go-ahead to start Pilot.		now	3		3 NA	Open	10/31/2024 - This finding will be reevaluated by the IVV team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout. 09/30/20204 - The status of this preliminary concern will be reevaluated by the IVV team after the project team determines the approach, requirements/functionality and schedule for the Pilot and Statewide rollout.		
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.	Molina, Brad	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 contract requirements to passed test cases, and, per the BI-19 (Complete and Final Test Plan), "Maps the implementation, 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	10/31/2024 - As DHS works with the ASI to confirm final scope for restarted project, currently known as Option 2, it is critical that DHS and ASI understand what contractual requirements have been completed and which still need to be developed. DHS has 09/30/2024 the ASI did demonstrate some progress in providing a set of RTM reports that match the approved Deliverable Expectations Document (DED). However, DHS still did not receive a comprehensive report to confirm all expected contractual requirements for approved Epics have been developed and tested successfully. With more scope being added as part of new project direction, it continues to be critical that DHS is provided an RTM to confirm requirements are met. 08/31/2024 - As of the end of the reporting period, the ASI had not provided the comprehensive Requirements Traceability Matrix for BES 1.0 based on the Deliverable Expectation Document (DED), only an interim version, prior to the start of FAT testing. DHS needs this finalized RTM to validate all contractual requirements have been included in BES 1.0 as scheduled and successfully tested prior to go live for Pilot. 7/31/2024 - Discussions were held throughout July regarding the format and structure of the Requirements Traceability Matrix (RTM). However, the ASI has not distributed a reformatted BI-21 Requirements Traceability Matrix deliverable for DHS review and approval. IVV remains concerned that the delay in finalizing the RTM may lead to requirements tracing issues, missing required Pilot functionality in BES, testing gaps, and project delays. 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 reports of the BI-21.	9/9/2024 include information on interim version provided prior to FAT. 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	
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 Evan	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	3		2 Low	Open	10/31/2024 - This finding will be reevaluated by the IVV team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout. 09/30/2024 - The 7 interfaces used in the planned Pilot release, BES1.0, have been completed. However, the other 12 releases required for the statewide release, BES1.1, will be required with the revised approach to merge. This finding is being kept open at a low priority until all 19 interfaces are completed. 08/22/2024 - All tests except those related to the Wells Fargo Lockbox interface have been completed. These seven tests require initiating a new service ticket with Wells Fargo. Tests are expected to be completed before the beginning of the Pilot phase. 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 completing the development of the remaining epics is condensed and aggressive, which may increase the likelihood of schedule delays, quality issues, and a higher volume of testing defects.	Kalsi, Neetu	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. 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) - The ASI provides INT results and SIT scenarios for incomplete Epics to DHS for review/approval ahead of SIT execution. (Removed comprehensive based on what ASI delivered to DHS, 10/31/2024) 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	10/31/2024 – The project team has announced further delays in the dates for Pilot and Go-Live and agreed to combine BES 1.0 and BES 1.1 into one release. Based on the 10/30/2024 project status meeting, the development for Epic 203 (Report Viewing and On-demand Submission) has been delayed, and the due date has been changed from 10/4/2024 to 1/14/2025. The due date for Epic 243 (Reports – Priority 2, Set #1) and Epic 244 (Reports – Priority 2, Set #2) has been updated from 10/4/2024 to 11/1/2024. IVV expresses concerns that the upcoming new schedule may retain or increase concurrent activities, making it challenging to manage and coordinate multiple tasks simultaneously. This may compromise the project's ability to complete testing and other essential activities, ultimately impacting the Pilot and statewide Go-Live dates. 9/30/2024- The project has recently announced additional go-live delays but have yet to provide a revised go-live date. The SI has stated reasons for the delay include significant volume of defects, code quality issues, development delays, and DHS needing more time to complete their FAT testing. As of the last project status meeting, epics 243, 244, and 286b remain incomplete and the ASI was unable to provide expected completion dates. IVV remains concerned that the accelerated schedule may adversely impact overall project outcomes, leading to increased risks of quality issues, further schedule delays, and insufficient testing. 8/30/2024 – In August, the ASI announced additional delays in delivering several reporting functions planned for phased implementation into FAT. The Epic due dates were pushed further, with Epic 243 due date moved from August 12,2024 to October 4,2024 and for Epic 244, the due date was updated from August 23,2024 to October 4,2024 which will result in the overlap of SIT, FAT testing support, and BES 1.1 (statewide) development efforts. The development progress for Epic 243 was revised downward from 93% to 85%. IVV remains concerned that in addition, the items	11/13/2024 Recommendation #2: The SIT tests have already been reviewed and approved by DHS for the incomplete Epics. Any new tests for CRs will also be reviewed and approved by DHS. This is and always has been our process. Recommendation #3:Test resources are not an issue. They have bandwidth for all responsibilities. This has not been an issue. 06/14/2024 Why is this still red? This should be in yellow for monitoring after discussions in April (March report).	
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 manual 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 BES version at go-live. • 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. • 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. • 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	10/31/2024 - This finding will be reevaluated by the IVV team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout 9/30/2024 - Without an RTM, there is ambiguity on the ASI presented enhancements and critical functionality list developed by DHS as compared to the contract requirements. IVV recognizes the project is almost 6 years old, meaning policy and business operations has changed which may drive the need for enhancements. However, these lists should be validated and negotiated by DHS and ASI to ensure DHS does not pay for functionality twice. 8/30/2024 - DHS continues to emphasize the need for workouts to be documented and incorporated into training, with a plan to update documentation as defects are resolved to enable pilot workers to be most effective. 7/31/2024 - DHS and the ASI continue to document and develop workarounds in preparation for Pilot. There are now two workaround areas; 1) known gaps in functionality and 2) defects discovered during testing. Additionally, planning is ongoing for incorporating these workarounds into the training process. 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 - 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	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. - Improve rigor in the Design process by verifying all impacted policy and DHS SMEs are involved and approve the design to avoid extensive defects and gaps in functionality that may trigger the need for a change request 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	10/31/2024 - This finding will be reevaluated by the IVV team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout 09/30/2024 - No material update in this reporting period. 8/30/2024 - Design activity was minimal in the reporting period, with DHS reviewing the final Self Service Portal (SSP) designs. IVV continues to monitor design activities to validate continued collaboration between the ASI and DHS. 7/31/2024 - IVV observed positive progress this month with the ASI providing specific actions to address DHS concerns regarding the Mass Change Functionality (Epic 208). 6/31/2024 - IVV 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	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. Jessica 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.	11/13/2024 For next status reporting - eWorldES plans is shifting to waterfall methodology once the related decision log item is approved by DHS and will not be doing sprint and epic demos moving forward. 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
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.	Kalsi, Neetu	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 and ASI revisit the testing approach to prioritize completion of remaining test activities and conduct comprehensive System Integration testing (SIT) to minimize defect leakage to User Acceptance Testing (UAT). - ASI assesses the potential impact of the large number of unresolved defects on future development efforts, ensuring a more robust and efficient development process 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) - DHS and ASI monitor INT/SIT closely for both breadth and depth of testing to ensure the system is adequately tested (Closed 10/30/2024) - ASI utilize the two-week FAT testing pause to address and resolve outstanding SIT defects and apply the fixes in the FAT environment, ensuring that these defects do not recur when FAT resumes, optimizing testing efficiency and reducing potential defect rediscovery. (Closed 10/30/2024) 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) - 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 (09/26/2024)	UAT	4	4	High	Open	10/31/2024 - As of October 30, 2024, DHS testers identified a total of 1618 defects with 373 defects still unresolved, comprising 123 High Severity, 177 Medium Severity, and 73 low severity defects. The ASI resolved and moved to UAT 175 defects during the two-week UAT testing pause. Despite this progress, significant gaps remain. 20% (137/682) of real-time environment test cases and 49% (205/417) of time travel environment test cases are unresolved. This poses significant risks, potentially compromising system reliability, performance, and quality. Unresolved defects and incomplete testing may lead to undiscovered issues, impacting overall system integrity. 9/30/2024 - IVV recognize the project team's decision to postpone the Pilot and Statewide implementation, and that DHS and ASI are jointly developing a revised approach and schedule. Meanwhile, IVV's review of testing trends reveals mixed results. Compared to last month, passed test cases increased 22% in the real-time environment (421 to 513) and 309% in the time travel environment (42 to 172). However, failed test cases remained relatively stable in real-time and rose 51% in the time travel environment (106 to 160). As of September 25, 2024, DHS testers identified 948 unique defects, excluding duplicates and user errors. Notably, 382 defects (28%) remain open and unresolved, with a concerning severity breakdown consisting of 1 critical, 102 high, 197 medium, and 78 low-severity issues. This month marked the first occurrence of critical-severity defects, with 5 emerging in a single day, prompting IVV team concern given the advanced stage of FAT testing. The delayed go-live dates and ongoing testing challenges may compromise project timelines, increase defect resolution efforts, elevate risk levels, and require additional resources. IVV recommends an intensified focus on defect resolution, testing efficiency, and risk mitigation to ensure project success. 8/30/2024 - As of August 29, 2024, 29% of the defects identified during FAT, totaling 313 out of 1056, remain open and moved approximately		11/13/2024 DHS reviews and approves all SIT tests to ensure full coverage of functionality. The test team tests the designs including the OPA rules as expected. DHS is testing their processes and policy which is why they are raising bugs that many are actual design changes because they do not meet their expectation of their current process in HAWI. The two-week break was to resolve as many UAT bugs as possible in addition to any blocker bugs in SIT.We resolved and
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 (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.	NEW Include the Secure Enclave within the work breakdown structure along with the known tasks related to the IRS Assessment to continue receiving FTI in BES. 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. COMPLETE - Determine when the infrastructure design baseline will be completed. (06/30/2024) - Perform a full review of all draft SSP controls for content and accuracy 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. (9/26/2024) - Begin monthly Plan of Action and Milestone update meetings between DHS Security and the ASI Security teams to inform each other of progress and updates made against each POAM. (10/31/2024)	Prior to the start of the third-party assessment.	4	5	High	Open	10/31/2024 - In October, the ASI continued to work on rewriting the implementation statements for the BES System Security Plan (SSP). The ASI completed rewrites of implementation statements of five of twenty control families in the main body of the SSP. The ASI has completed the basic infrastructure for the Secure Enclave, however, there is confusion about what has been completed in the Secure Enclave and when it will be done. Applications that need to work within the Secure Enclave must be configured to work within the explicit security requirements placed on the Secure Enclave. These configurations may require vendor support or may not work within an environment with IRS Publication 1075 security requirements. (9/26/2024) - IV&V remains concerned about the IRS Assessment due to the large number of critical and high Plans of Action and Milestones (POAMs) that remain to be remediated by both DHS and the ASI. Currently, eight (8) POAMs have been remediated, while over two hundred (200) critical and high POAMs remain open. 9/26/2024 - In September, the ASI completed the updates to the System Security Plan (SSP) Appendix A, specific to the Secure Enclave and IRS Federal Tax Information Requirements. A POAM (Plan of Action and Milestone) is tracking updates to the main body of the SSP. The ASI has also stabilized the Tenable Nessus scans, which scan for vulnerabilities and configuration compliance of the servers that host BES. DHS has begun implementing the Social Security Administration (SSA) security awareness training and collecting compliance evidence to submit to the SSA. This remediation of a 2021 SSA POAM is expected to allow BES access to SSA data. 8/29/2024 - Through August, the ASI has continued authoring procedure documentation that supports the SSP. PCG completed the independent third-party assessment and delivered a draft report. The assessment found 34 critical, 204 high, 456 moderate, and 78 low findings. DHS and the ASI also responded to requests for		09/9/2024 SSA accepted DHS plan for training in Sept 9 meeting, so this should be reflected in September report. Also, need to determine what resources will be used and final process for addressing the missing documentation. Might want to have a risk for gap in Security support from DHS since Jack has left. 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
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 • 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 resources (see Finding #61). • 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	10/31/24 - With the recent departure of the ASI's recently hired development quality lead, the ASI hired two technical resources to mitigate code quality challenges that have created project delays. 9/26/24 - The ASI has recently taken steps to increase the code quality and productivity of their development team by adding senior development resources including a development quality lead and a new development manager. They hope to refocus the development team to be more disciplined in their coding practices and unit testing so as to reduce coding defects. The ASI has reported they currently have 84 developers (37 off-shore and some part-time) working on BES and plan to add 50 more off-shore developers at some point in order to expedite development. The ASI has acknowledged that coding defects have hampered the projects productivity, created project delays, and frustrated the DHS testing team given the volume of defects they needed to report and document. It remains unclear how quickly newly added developers will be able to get up to speed and how quickly they can be productive enough to make a measurable, positive impact on the pace of development. As of the last ASI status report, there are 376 unresolved defects (104 high criticality), despite their best efforts to bring that number down. The ASI will utilize the recently announced 2-week FAT pause to resolve defects. 08/22/24 - The ASI has initiated a Go-to-Green (G2G) Plan to mitigate project delays, including development delays that could impact go-live milestones. One of the G2G plan action items is to "Staff with additional developers"; with the ASI confirming they will be adding 50 additional offshore developers. It remains unclear how quickly newly added developers will be able to get up to speed and how quickly they can be productive enough to make a measurable, positive impact on the pace of development. Additionally, IVV is not aware whether current velocity, capacity, and burndown tracking will allow the project to determine how		09/09/2024 Vic confirmed that 50 developers have been added to project. 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. COMPLETE 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. - 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. 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 demos 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	Immediate	3		4 High	Open	10/31/2024 - This finding will be reevaluated by the IVV team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout 09/30/2024 - The project did not meet the Pilot Go Live date as the schedule was not realistic for the planned work to be performed, and new functionality was requested by DHS via change requests (12 overall). No updated schedules were published in September, as the ASI worked through revising the schedule to align with the new project direction (combining releases) and including the scope for change requests and a crucial functionality list from DHS. Per prior recommendations, the ASI and DHS should conduct a root cause analysis and incorporate the results in the new schedule. 08/30/2024 - Underestimated development work that will coincide with FAT testing and related defect resolution, has created risk for completing Epics in time for comprehensive INT, SIT and FAT testing prior to Pilot. IVV is concerned that Epics might need to enter Pilot without full testing, causing issues for workers completing their required work. DHS has also submitted additional Change Requests that may require the schedule to be delayed. As of the end of the reporting period, the ASI and DHS are talking through a revision of the schedule that will at a minimum push FAT testing out to end of September. 07/31/2024 - The ASI is actively working on defect resolution and new development work for BES 1.1. A few key documents/deliverables, including the Disaster Recovery Plan, Data Conversion results, and Requirements Traceability, are behind schedule. The ASI is hiring additional resources; however, it is not known if these resources will have a positive impact on the work remaining as defined in the schedule. 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		11/13/2024 I'm not sure the reader will know the "Option 2" reference and I don't see any subsequent references in the finding's details. Consider removing the latter half of the sentence "...to support Option 2." 09/9/2024 Numbr of defects, phased in epics, also outstanding CR. CR pushing schedule out beyond Sept. Phased epics should be in this week. Optimistic for getting defects and epics addressed by end of September. But should include all three of the issues.
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 changes/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	10/31/2024 - This finding will be reevaluated by the IVV team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout 9/26/24 - The project continues to make progress on its technical debt (infrastructure activities that were put on hold in order to work on priority items), including improvements to MongoDB, DataDog, and Boomi. The project has initiated the process with Neterrich to convert to the new Google SecOps platform and may add more components/services, including the Consul API Gateway and Private Service Connect. The ASI intends to update the BI-12 before go-live to reflect these changes/additions. 8/22/24 The ASI continues to make progress in building out the finalized list of infrastructure components into the BES platform. The ASI appears to have a structured approach for building out and testing these components and they have reported success with some disaster recovery (DR) tests. 7/26/24 - No material update for this reporting period. 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) for 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		11/17/2024 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. 10/31/2024 - 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. Further, the Project Team has yet to finalize components that will make up 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. COMPLETED • DHS and ASI work to clarify/solidify plans for the potential use of configuration management tools. • 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	10/31/24 - This finding will be reevaluated by the IVV team after the project team completes the replanning and determines the approach, requirements/functionality, and schedule for the Pilot and Statewide rollout. 9/26/24 - The ASI had recently stated they plan to update their Configuration Management Plan (CMP) list of configuration items (CIs) and CMP procedures by 9/20/24 but has since experienced some delays in completing these activities. 8/22/24 - IVV has yet to receive a detailed, comprehensive list of configuration items the ASI will be tracking. 7/26/24 - No material update for this reporting period. 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		9/9/2024 Still in progress. Plan to update Configuration Management Plan list of items. Two documents, management plan (end of week), Configuration Management procedures (more detailed). Working with Mark M on what should be included. Trying to work with folks who really understand the details and are available. 10/31/2023 - Vic - We provided a listing, working on a plan to implement.