

DAVID Y. IGE
GOVERNOR



TODD NACAPUY
CHIEF INFORMATION
OFFICER

OFFICE OF ENTERPRISE TECHNOLOGY SERVICES

P.O. BOX 119, HONOLULU, HAWAII 96810-0119
Ph: (808) 586-6000 | Fax: (808) 586-1922
ETS.HAWAII.GOV

March 14, 2019

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

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

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

Pursuant to HRS section 27-43.6, which requires the Chief Information Officer to submit applicable independent verification and validation (IV&V) reports to the Legislature within ten days of receiving the report, please find attached the IV&V Transition Readiness Assessment Update the Office of Enterprise Technology Services received for the State of Hawaii Department of Human Services Systems Modernization Project.

In accordance with HRS section 93-16, this report may be viewed electronically at <http://ets.hawaii.gov> (see "Reports").

Sincerely,

A handwritten signature in black ink, appearing to read "Douglas Murdock".

DOUGLAS MURDOCK
Chief Information Officer
State of Hawai'i

Attachment (1)



Hawaii Department of Human Services Systems Modernization IV&V Project

IV&V Transition Readiness Assessment UPDATE – Enterprise System Integrator (ESI) Maintenance and Operations (M&O) – Final

**Report Date: March 7, 2019
V1.1**



621 Capitol Mall, Ste. 1425
Sacramento, CA 95814
916-565-8090
www.publicconsultinggroup.com

Document History

Version	Date	Brief Description of Modifications
1.0	2/7/19	ESI M&O Transition Assessment Update Report - Draft.
1.1	3/7/19	Final Report: Updated based on comments and clarifications received.

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1 Executive Summary

In accordance with Section 4.6.1.2 of RFP # DHS-RFP-17-01, the IV&V vendor is responsible for conducting a Transition Readiness Assessment to assess the risk of migrating / transitioning maintenance and operations (M&O) activities for the DHS Enterprise Platform from the incumbent Enterprise System Integrator (ESI), KPMG, to the incoming ESI, BIAS, and its subcontractors (Pacxa and ITC Infotech). The ESI transition was completed in December 2017. Initially, responsibility for operating systems and hardware was transferred from KPMG to BIAS, followed by the transfer of platform shared services and middleware software components. Since the ESI transition ended before PCG's services began, PCG conducted a point-in-time assessment from June – September 2018 that focused on activities performed during M&O. Several high priority items were identified in that assessment which DHS, BIAS, and KPMG have worked to resolve or mitigate since the assessment was completed.

This report provides an update to our previous ESI Transition Readiness Assessment, which focused on project management, governance, infrastructure and release management, and Help Desk management. For this reporting period, the IV&V team re-visited the findings that had a priority rating of “High” or “Medium” to assess whether tasks completed between August and December 2018 had impacted the standing (priority) of any of these findings. The team conducted this assessment update focusing on these previously identified findings, and did not seek to identify any new risks. Of the nine selected findings, none increased in priority during the period, and five saw their priority ratings reduced due to proactive responses by the project team to address the findings. Updates to the most critical items from the original assessment are noted below.

Inexperienced or deficient resources – In the prior reporting period, the IV&V team observed that the ESI staff lacked technical and project management expertise, which resulted in longer than expected resolution times for technical issues and temporary workarounds. Since then, the ESI has made progress resolving M&O resource skill gaps which should continue to increase their capacity and cadence of service delivery over time. Notable changes include the addition of five Pacxa resources including product specialists for Commvault and Adobe, the addition of a BIAS Siebel product specialist with prior KOLEA experience, and project managers achieving Project Management Professional (PMP) certification. Based on this progress, the risk priority has been reduced from High to Medium.

Despite the resource improvements, additional training and expertise for the support team would be useful, and could help streamline fixes and workarounds to components such as Enterprise Content Management (ECM), for which an annotation feature unavailability issue went unresolved for three months due, in part, to need for additional training and expertise. As the State moves forward with their infrastructure roadmap, resources with key skills in DevOps, PaaS (platform as a service), and other cloud skillsets will become increasingly imperative.

Lack of detailed repeatable processes for shared services – The IV&V team previously observed that the absence of ESI-established governance processes led to confusion about the platform rules and guidelines, including the designation of vendor access to system environments and components and the identification of who should be contacted when issues arise. In this follow-up assessment, the IV&V team found that the ESI increased the use of repeatable processes for shared services, including development and publishing of approximately 25 new documents in support of better platform governance and management

of the DHS Platform. The ESI also engaged Unisys via productive weekly meetings and ongoing coordination to help formulate better governance and refine those processes. Based on this progress, the risk priority has been reduced from High to Medium.

Inefficient communications – IV&V previously noted that the ESI lacked effective, well-documented communication processes, which led to miscommunications, uninformed decisions, stakeholder confusion/frustration, and could potentially lead to disruption of the platform environment. During this reporting period, IV&V observed that processes have improved, including more accurate and timely meeting minutes, and the creation of a draft Communications Plan containing roles and responsibilities for various project stakeholders. Gaps in effective communications remain, such as the recent failure to notify MedQuest Division (MQD) staff that the ECM annotation feature was fixed, and the failure to notify stakeholders such as MQD that one of the ESI's recently added PMs rolled off the project. Nevertheless, based on the progress toward documenting communication processes, the risk priority has been reduced from High to Medium.

Unclear and/or undocumented DHS Office of Information Technology (OIT) responsibilities – In the prior reporting period, the IV&V team observed that OIT roles and responsibilities were not clearly understood, documented, nor executed against. Since then, OIT's role has since been expanded and OIT has been granted broader authority over the ESI and the DHS platform. That said, IV&V noted that this change in authority has not been widely communicated. Further, OIT/PMO ESI roles and responsibilities have yet to be documented and stakeholders are unclear whether OIT and/or the PMO has the authority to direct the ESI. In practice, the PMO has reduced their involvement in ESI management and OIT continues to improve and take on more responsibilities, but the risk priority remains High.

High amount of Enterprise Platform security vulnerabilities – The IV&V team previously observed a high number of security vulnerabilities affecting the Enterprise Platform. An ongoing remediation effort by DHS OIT and the ESI has successfully reduced the number of Critical vulnerabilities by over 50% from August to December 2018 with a focus on vulnerabilities occurring in the Production environment. DHS OIT continues to use the Vulnerability Management System (VMS) to track metrics, action items, and key topics related to security vulnerabilities to prioritize remediation tasks. Now that the period of non-disruption (POND) has passed, BIAS has increased their patching efforts, and is refining their patching processes. While vulnerabilities remain, risk mitigation planning is in place and being executed; accordingly, the IV&V team has reduced the risk priority from High to Medium.

2 Updated Assessment Findings and Recommendations

In the prior reporting period, PCG identified 11 risks and issues and provided detailed recommendations on how the Project could mitigate or close out each finding. For this reporting period, the IV&V team re-visited the findings that had a priority rating of “High” or “Medium” to assess whether mitigation tasks completed between August and December had improved the standing (priority) of any of these findings. Of the nine selected findings, none increased in priority during the period, and five saw their priority reduced due to actions taken by the project team to address the findings. The table below provides an updated listing of the nine risks, and issues re-assessed by PCG for this report.

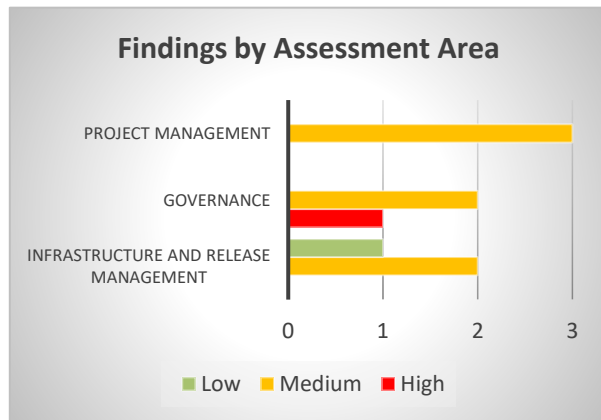


Figure 1: Findings by Assessment Area

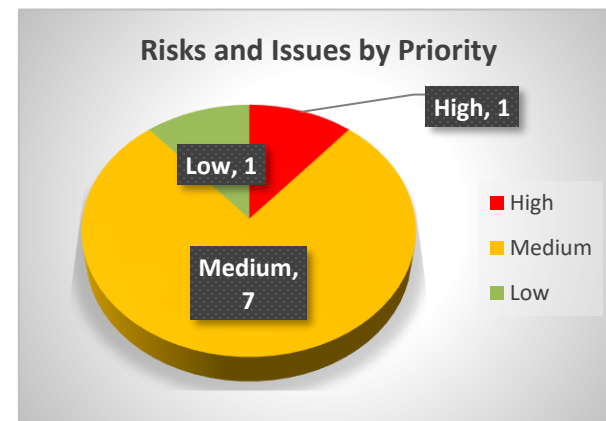


Figure 2: Risks and Issues by Priority

Table 1: IV&V Assessment Findings

Project Management		
Key Findings	Priority (Aug)	Priority (Dec)
<p>Issue – Lack of documented and effective communication processes. The IV&V team previously identified a that a lack of documented and effective communication processes has led to miscommunications, uninformed decisions, stakeholder confusion/frustration, which could ultimately lead to disruption of the platform environment. In the December reporting period, IV&V found that the ESI continues to improve communication processes, including more accurate and timely meeting minutes. However, their lack of refined communication processes continues to put an undue burden on project participants who at times struggle to ensure effective communications are consistently occurring. For example, during a recent status meeting, MQD expressed their frustration that they were not notified that the ECM annotation feature had recently been fixed after being unavailable for more than 3 months. This misstep may have been avoided if a clear, documented communication process with clear roles and responsibilities for communicating platform updates/repairs were defined and followed with sufficient rigor. Additionally, IV&V had previously recommended ESI improve communications regarding staffing changes, however, the recent departure of one of their recently added PM's from the project was not widely communicated and several stakeholders were unaware of the change.</p> <p>While the ESI has yet to publish a finalized version of their communications plan, they have recently posted a draft version of their Program Communications Plan which, upon initial review, looks to establish the communications framework for the ESI efforts with DHS and Unisys. It details the primary project stakeholders, including their respective roles and responsibilities and includes sections detailing the communication vehicles. The IV&V has reduced this priority to Medium based on progress to date.</p>	H	M
<p>Risk – Inexperienced or deficient technical and PM resources. In the prior reporting period, the IV&V team observed that ESI staff lack technical and project management expertise, which has resulted in longer than expected resolution times for technical issues and temporary workarounds. If experienced resources are not assigned to these positions, it is likely that the ESI will struggle to deliver responsive M&O and shared services to multiple ASIs. In the December reporting period, IV&V found that the ESI made progress resolving M&O support team resource gaps which should continue to increase their capacity and cadence of service delivery over time. Notable team changes include Pacxa adding 5 additional resources including product specialists for Commvault and Adobe, BIAS adding a Siebel product specialist with prior KOLEA experience, and project managers achieving PMP certification.</p> <p>Despite the resource improvements, stakeholder feedback indicates additional training and resources could further</p>	H	M

improve BIAS' quality and speed of delivery, especially related to deep technical skills. For example, the ECM annotation feature had been unavailable to MQD users for more than 3 months until it was recently repaired. This was due, in part, to the need for additional training and expertise. ECM servers clustering problems continue to stump ESI engineers. Though a high availability workaround is in place, it is less than ideal. Further, the ESI still either lacks the time, skillsets, and/or impetus to automate manual tasks and to develop more extensive DevOps scripts and tools which continues to slow environment provisioning and refresh activities as well as limit rollback capabilities. A lack of more extensive automation is typically indicative of less mature managed service providers. It is important to note that the need for more extensive DevOps, PaaS (platform as a service), and other cloud skillsets will become more imperative if the state moves platform components to the cloud.

Risk – Lack of attention to process/practice efficiencies and process improvement. IV&V previously identified that process improvement appears to be lacking in many existing ESI processes. Stakeholders have reported that inefficiencies have been communicated to the ESI but have not been effectively addressed. Processes do not seem to be regularly reviewed for process improvement, indicating that the ESI has not consistently implemented continuous process improvement principles.



Governance

Key Findings	Priority (Aug)	Priority (Dec)
<p>Risk – Lack of detailed repeatable processes for shared services. In the prior reporting period, IV&V found that the absence of ESI-established governance processes led to confusion about the platform rules and guidelines, including the designation of vendor access to system environments and components at any given time and the identification of who should be contacted when issues arise. In this reporting period, IV&V observed that the ESI increased the use of repeatable processes for shared services, including developing and publishing approximately 25 new documents in support of better platform governance and to support better management of the DHS Platform. While many of the new documents were ServiceNow Job Aids, they also included the following:</p> <ul style="list-style-type: none"> • Problem Management Process Guide • Data and Security Privacy Guide • Change Management Process Guide • Release Management Process Guide • M&O Reporting Guide • Monthly Status and SLA Reporting Template • Account and Access Management Policies and Procedures <p>The ESI also produced a draft version of a Shared Services Design document, which provides high-level governance processes and procedures for shared services deployed to the State Hub, and promotes the use of standards for shared services to facilitate the reuse of solutions within DHS. It provides business and technical requirements, an overview of the Shared Services Design concepts, and additional details for coordinating provisioning of identity & access management services. The ESI should look to finalize this document and put it into practice. Finally, the ESI successfully engaged Unisys to help formulate better governance and refine repeatable processes. Weekly ESI/ASI M&O Touchpoint meetings have not only been very productive and improved ESI/ASI communications but also improved coordination and communications to support activities that still lack detailed and/or documented governance processes.</p> <p>Clear governance controls and detailed repeatable processes and procedures have been a work in progress, and continue to mature as BIAS and Unisys work together. Documentation remains reactive instead of planned and further refined as time allows. As noted above, the SI has demonstrated progress in mitigating this risk. While opportunities for improvement remain, the IV&V team has reduced this risk to Medium priority based on progress to date.</p>	H	M
<p>Issue – Unclear and/or undocumented DHS Office of Information Technology (OIT) responsibilities. IV&V previously identified that OIT roles and responsibilities are not clearly understood, documented, nor executed</p>	H	H







against. Failure to define clear roles, responsibilities, and expectations can lead to confusion, incorrect assumptions, and failure to adequately perform important platform-related activities, which can adversely affect the project and impact project schedule and budget. Upon re-assessment of this issue, IV&V found that OIT has expanded their role and been granted broader authority over the ESI and the DHS platform, although communication of this added authority has not been widespread. Further, OIT/PMO ESI roles and responsibilities have yet to be documented and stakeholders are unclear whether both OIT and PMO has the authority to direct the ESI. In practice, the PMO has reduced their involvement in ESI management and OIT continues to improve and take on more responsibilities.

Risk – Lack of clear Service Level Agreements, and/or SLAs not being enforced. IV&V previously identified that ESI Service Level Agreements (SLAs) are not clear regarding term definitions, metrics, or how measurements will be done and interpreted. OIT, the agency tasked with enforcing SLAs, is still working to understand what constitutes an outage and is working with the ESI to clarify SLAs. MQD is hopeful that the agreed SLAs will address current system slowness and user/customer experience, which their users have stopped reporting on due to the lack of progress in the past.

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Infrastructure and Release Management

Key Findings	Priority (Aug)	Priority (Dec)
<p>Issue – High amount of Enterprise Platform security vulnerabilities. In the prior reporting period, the IV&V team found that the Enterprise Platform has a high number of security vulnerabilities. An on-going remediation effort by DHS OIT and the ESI has successfully reduced the number of Critical vulnerabilities by over 50% from August to December with a focus on Production environment. DHS OIT continues to use the Vulnerability Management System (VMS) to track metrics, action items, and key topics related to security vulnerabilities to prioritize remediation tasks. BIAS has increased their patching efforts, now that the period of non-disruption (POND) has passed, and is further refining their patching processes. An Enterprise Platform Master Schedule has been created as well as a draft version of the Master Schedule Guide, although it is unclear if the master schedule is being fully utilized or regularly updated. The ESI continues to balance patching security vulnerabilities with competing program priorities such as the IDM project and Mass Updates from Unisys.</p> <p>The IV&V team has reduced this priority to Medium based on progress to date.</p>		
<p>Risk – Platform Stability. The IV&V team previously identified that two instances of critical production servers (the state hub Oracle Database Appliance [ODA] and the ECM server) are running un-clustered on a single node, which creates a single point of failure which could affect multiple components of the KOLEA Solution. BIAS made progress on stabilizing the platform and re-configured the ODA server into a high-availability node. The ECM server issues are not resolved, but a workaround has been established using the F5 load balancer, and BIAS is actively working with IBM to identify a solution.</p> <p>The IV&V team has reduced this priority to Low based on progress to date.</p>		
<p>Risk – Lagging software version upgrades/patching. The IV&V team previously observed that software product versions are lagging beyond the "n-1" best practice policy. BIAS confirmed that they struggled to upgrade and patch software products due to DHS-directed competing priorities and scheduling challenges, and this continues to be the case, with projects such as the IDM project taking precedence over patches in some instances.</p> <p>The incoming ASI, Unisys, was surprised to find multiple KOLEA platform environments with inconsistent configurations, citing varying levels of patching, product versions including many that have fallen behind the n-1 version standard, and environments that require further assessment/testing because they have sat idle for months. Most notably these are present in the differing functional releases in each environment and the IDM/ECM configurations. The IDM and ECM components have upgrade projects in flight and may remain at varying levels for the next several months. These inconsistencies have required the BES DD&I Project to alter their approach and have created logistical and contractual problems that have yet to be resolved. Most patches/updates require Unisys to</p>		

validate and regression test the environment after each patch/update, and BIAS is working with them to streamline the deployment process.

IV&V notes that both the ASI and the ESI have roles in maintaining adequate platform environments. One aspect of the ESI's role is to establish platform governance, rules, and guidelines to effectively manage ASI platform-impacting activities and to ensure that ASIs are 'good citizens' of the platform environment, as stipulated in the ESI scope of work. As noted in the **"Lack of detailed repeatable processes for shared services"** risk described above, governance controls and procedures are a work in progress.

Appendix A – Interviews, Meetings and Deliverables Reviewed

This section provides a list of the IV&V interviews, meetings, and deliverable reviews performed as part of the assessment.

Table 1: Interviews and Meetings

Topic	Attendee(s)	Date
DHS MQD Interview for ESI Assessment update	MQD	12/14/18
DHS OIT Interview for ESI Assessment update	OIT	12/13/18
BIAS Interview for ESI Assessment update	BIAS	12/14/18
Unisys Interview for ESI Assessment update	Unisys	12/13/18
IDM Upgrade Project Schedule Review	Project team	12/11/18
Medicaid Weekly Transition and Open Issues Meeting	Project team	recurring
Weekly Change Advisory Committee (CAC) Meetings	Project team	recurring
Weekly ESI/Unisys M&O Touchpoint	Project team	recurring
Project Status Report Out Weekly Meeting	Project team	recurring
Platform M&O Status, Whiteboard and Security Meeting	Project team	recurring
Enterprise Operations Committee	Leadership Team	recurring

Table 2: Deliverables and Artifacts Reviewed

Deliverable Name	Deliverable Date	Version
Draft Program Communications Plan	1/15/2019	0.3
Draft Shared Services Design Document	N/A	N/A
Draft Master Schedule Guide	11/9/2018	0.5
Enterprise Platform Master Schedule	N/A	1.0
Problem Management Process Guide	10/24/2018	1.0
Customer Satisfaction Plan	N/A	N/A
Customer Satisfaction Survey	N/A	N/A
Data and Security Privacy Guide	11/1/2018	1.0
Change Management Process Guide	11/6/2018	1.0
Release Management Process Guide	11/15/2018	1.0
M&O Reporting Guide	11/27/2018	1.0
Monthly Status and SLA Reporting Template	N/A	N/A
Account and Access Management Policies and Procedures	12/4/2018	1.0
ESI Information Security Incident Response Policy	12/4/2018	1.0
ESI Information Security Incident Response Checklist	N/A	N/A