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February 20, 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 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,

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 – Application System Integrator (ASI) Maintenance and Operations (M&O) – Final Report

Report Date: February 14, 2019

V 1.1



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Document History

Version	Date	Brief Description of Modifications
1.0	1/29/2019	Initial draft of the ASI Transition Readiness Assessment M&O Report.
1.1	2/14/2019	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 KOLEA Solution from the incumbent Application System Integrator (ASI), KPMG, to the incoming ASI, Unisys. The ASI transition began in August 2018 and formally ended in October 2018 (with ancillary support from KPMG continuing through January 2019), representing a timeframe that was compressed from six months to three months.

PCG's ASI M&O Transition Readiness Assessment was conducted from August – December 2018. This report provides the results of our point-in-time assessment, which focused on areas most likely to influence M&O transition, namely project management and organizational change management, maintenance and operations management, configuration and release management, and quality management. Based upon the RFP requirements, the Transition Readiness Assessment was conducted to capture strengths and potential risks or issues regarding Unisys' ability to assume responsibility of M&O for the KOLEA Solution. To that end, PCG observed several areas where the ASI Transition went well, including:

- All vendors implemented strong project management practices, including clear meeting agendas, minutes and communication, and regular tracking and reviewing of actions items, risks, and issues. These practices helped the transition complete successfully within the compressed time schedule. The KOLEA Solution continues to operate with full functionality with no noticeable differences to the end users because of the transition.
- The Enterprise Systems Integrator (ESI), BIAS, and Unisys continued to foster an open environment to jointly be responsive to DHS' needs. Unisys has assisted BIAS with new technology and responsibilities during KPMG's departure, such as ActiveBatch execution and new Disaster Recovery (DR) Test activities.
- Unisys implemented effective internal communication processes and worked with KPMG to streamline the transition process and meet the compressed transition timeline. In part, this success was also a result of Unisys bringing in staff with previous experience with the KOLEA Solution.
- KPMG conducted well-organized Knowledge Transfer (KT) sessions, including complex areas such as Enterprise Content Management (ECM). The KT sessions provided clear descriptions of the overall architecture and environments, as well as details about challenges faced during implementation.

PCG also identified several areas for improvement during the ASI M&O assessment, including the two risks noted below.

1. **Lack of Shadowing for Major Releases** – Due to the shortened time frame, a major release by Unisys could not be scheduled to occur during the transition period, and KPMG was unable to witness or “shadow” Unisys' major release processes. As a result, challenges inherent in the release process that have not been documented or anticipated may arise after KPMG's support period has ended. For example, during the KT sessions, Unisys asked about the clustered vs. non-clustered environments and how each is used in the non-production vs. production environments. While these

questions were addressed, Unisys will not encounter this situation until the next major release, which is likely the Identity Management (IDM) upgrade project scheduled for the end of January 2019. IV&V understands this risk is partially mitigated by Unisys' demonstrated understanding and M&O experience, and that general deployment processes are being documented in their M&O Plan. It should also be noted that Unisys was able to shadow KPMG's major release 4.08 to the non-production SIT02 environment in September 2018. While this increases the likelihood of Unisys' ability to support a major release (despite not having the opportunity to shadow the process), it does not fully mitigate the risk.

- 2. Unclear/Undocumented M&O Details May Invoke a Problem and/or Delay Problem Resolution** – The ASI transition is complete and, for the most part, Unisys seems capable and well positioned to adequately perform M&O. However, Unisys had yet to encounter some KOLEA processes (e.g., year-end batch processes) at the end of the assessment period. Based upon the complexity of the KOLEA Solution (employing multiple technologies) and the accelerated transition timeframe, some technical details may have been overlooked, not covered in KT sessions, or not documented (e.g., confusion that arose over functionality that was implemented in the Oracle API Gateway [OAG] *configurable policies* vs. *OAG scripts*). The IV&V team acknowledges the compressed transition timeframe and understands that both KPMG and Unisys took appropriate steps to transition available knowledge within that window, but also recognizes the possibility that details on other M&O processes may be missing. The IV&V team further understands that additional knowledge transfer sessions were held in January along with pre-cutover and cutover activities to provide additional information to Unisys, and that KPMG provided comments on the year-end process and schedule to MQD in January.

As previously noted, this report provides the results of a point-in-time assessment conducted from August – December 2018. PCG understands that DHS and Unisys continue to progress and to mitigate the findings identified by PCG. Detailed descriptions of our ASI M&O Transition Readiness Assessment findings are presented in Section 2, Assessment Findings and Recommendations.

2 Assessment Findings and Recommendations

DHS recognized that migrating and transitioning M&O responsibilities between vendors is a risky endeavor that can lead to service interruptions and negative business impacts. To help identify and mitigate these risks, DHS contracted with PCG to assess the transition of M&O responsibilities for the KOLEA Solution. PCG analyzed the Unisys contract, and met with DHS to agree upon the scope/focus of this assessment.

PCG first reviewed Unisys' contractual requirements to understand the ASI's scope of M&O responsibilities. These responsibilities include transitioning the KOLEA Solution, coordinating with the multiple system integration vendors, coordinating infrastructure and middleware, identifying and implementing application M&O, and defining and implementing a process for modifications, enhancements, account management, and quality assurance.

A firm understanding of the KOLEA Solution is critical to understand the risk factors and potential impacts facing DHS and its vendors. The KOLEA Solution is made up of shared components that can be used across divisions and systems, such as a Portal, Master Data Management (MDM), Security (Identity and Access Management), Audit, Customer Relationship Management (CRM), and Content Management. These components were developed as part of the KOLEA Solution and consist of Commercial Off-the-Shelf (COTS) software including Liferay Portal, Siebel Public Sector CRM, Oracle Policy Automation (OPA), Oracle Fusion Middleware (OFM), Oracle WebLogic, and Oracle MDM Hub (Siebel UCM). The applications are connected through the Oracle Service Oriented Architecture (SOA) Suite and run off Oracle Exadata and Exalogic underlying hardware.

With this understanding of contractual obligations and the KOLEA Solution, PCG performed a detailed assessment covering the M&O activities of Unisys, KPMG, and DHS that focused on the following areas:

- Project Management and Organizational Change Management
- Maintenance and Operations Management
- Configuration and Release Management
- Quality Management

At the end of this assessment, (see Appendix A: Interviews, Meetings, and Deliverables Reviewed), PCG identified 11 open findings (comprised of 7 observations and 4 risks) that are graphically represented and summarized below.

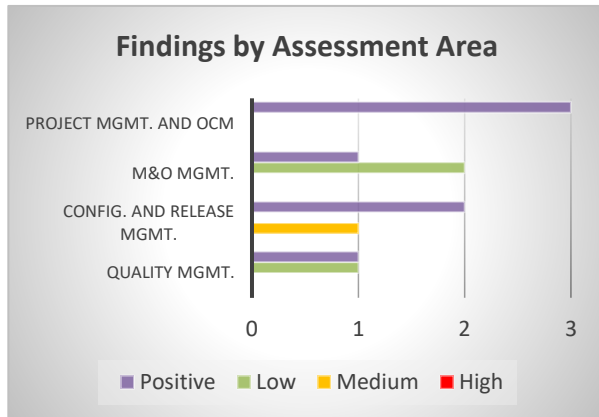


Figure 1: Open Findings by Assessment Area

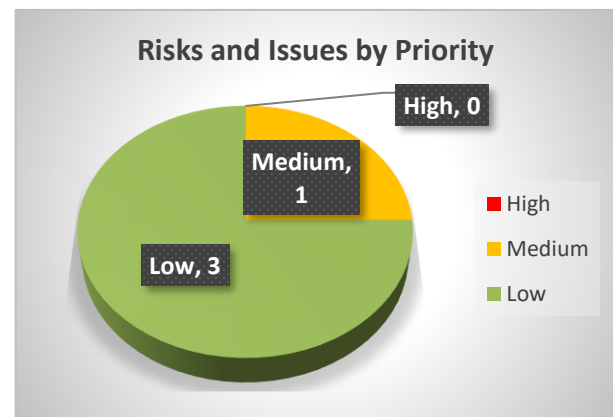


Figure 2: Open Risks by Priority

The IV&V team members were active participants throughout the ASI transition process, and provided our findings in as near to real-time as possible to allow the stakeholders to adjust quickly during the transition to avoid realization of risks. Unisys and KPMG were responsive to IV&V recommendations and proactive in mitigating risks. As a result, many IV&V findings were opened and subsequently retired during the assessment period. These have been included in the tables below to provide a comprehensive picture of the efforts and actions accomplished during the transition period. In total, PCG identified 4 risks, 2 issues, and 7 preliminary concerns that were retired during the transition period.

Table 1: Total IV&V Findings Summary

Finding	Open	Retired During Assessment Period
Observations (Neutral/Positive)	7	0
Risks	4	4
Issues	0	2
Concerns	0	7

The table below provides a detailed listing of the risks, issues, and concerns opened by PCG during this assessment. Collectively, these are referred to as findings and represent the results of the IV&V Team's analysis of the ASI M&O Transition activities. For each assessment area, the findings are sorted by priority (see Appendix C for a description of the priority assignments), with the most pressing concerns discussed first and the lower priority concerns discussed toward the end. PCG provided actionable recommendations for each finding where we believe remediation would be helpful. PCG notes that it is ultimately up to DHS to work with their partners to prioritize and resolve the identified findings, or to accept the risk.

As noted above, many findings were opened and then retired during the assessment period and are therefore no longer active. These are depicted in the table below with a status of "Retired" with gray text to indicate the finding is no longer active. The update that resolved the finding is shown in black text for the reader's convenience.

Table 2: IV&V Assessment Findings

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
Project Management						
Project Exhibits Strong Project Management	Finding – Positive	Project management and processes are a strength for the project. Meeting agendas are sent prior to meetings and meeting minutes are sent after meetings. Action items are being tracked and monitored, risks are being tracked and monitored, and schedule is being tracked.	Adherence to established project management standards and guidelines helps projects get delivered on schedule and on budget, with minimal surprises.	N/A	N/A	N/A
Effective Collaboration Between BIAS and Unisys	Finding – Positive	IV&V has observed several instances of highly productive collaborative discussions/ meetings between Unisys and the ESI, BIAS. Meeting attendees have validated this observation in post meeting discussions/comments. Unisys has been willing to	Positive and productive collaboration between BIAS and Unisys can go a long way toward smooth platform operations and minimize impact to DHS and BESSD users.	N/A	N/A	N/A

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
		assist BIAS with technology and new ESI responsibilities because of KPMG's departure (e.g. ActiveBatch execution/ monitoring and new DR Test activities). BIAS has consistently complied with Unisys requests.				
Unisys Using Efficient Internal Communications	Finding – Positive	During the initial KT sessions, the IV&V team observed that questions from Unisys came mainly from 2 or 3 individuals on the transition team. This raised a concern from IV&V that the collective Unisys transition team was not aware of the knowledge, as more than 2-3 people will be supporting KOLEA in production and may need to ask clarifying questions to understand their roles. After discussing further with Unisys, it was found that a robust communication process is being followed with their internal transition team, including detailed minutes from the KT sessions, 2-3-hour team debriefs, and input of the transition team is collected and represented in transition meetings.	Unisys was able to help KT sessions go smoothly by using them as Train-the-Trainer sessions, whereby a handful of critical Unisys resources were educated by KPMG, and then they in turn were able to go train the internal Unisys resources. This allowed each KT session to finish within the allotted time and overall enabled the ASI Transition to complete on schedule.	N/A	N/A	N/A

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
Unisys M&O Team Meeting Attendance	Preliminary Concern	<p>It is not clear if Unisys staff have started attending Operations Meetings with the ESI and DHS (Status, Change Control Board, Project, etc.).</p> <p>Update 10/2/18: IV&V verified that Unisys staff are now attending the M&O operations and project meetings and have scheduled separate meetings with the ESI to take ownership of their communications. Both the ESI and ASI confirmed that these meetings are occurring regularly and have been effective in keeping both sides apprised of M&O activities.</p>	Visibility of the operations meetings, cadence, structure and activities that will be transitioned to Unisys early in the transition period will provide them time to improve their knowledge of the transition activities and an opportunity to ask questions.	Include Unisys staff in the operations meetings as soon as possible.	High	Retired
Application Transition Time Frame Reduced	Risk	The ASI M&O transition schedule has been reduced to 3 months instead of the originally planned 6 months. Once the contract for KPMG ends, KPMG will not be available for questions, follow-up, or remedial trainings. A series of targeted Knowledge Transfer (KT) sessions have been developed and delivered by	It is highly likely that there will not be adequate time for the ASI to fully demonstrate readiness for assumption of operation, nor to validate that the efficacy of turnover is satisfactory. Unisys staff appear to be skilled, but nevertheless will likely take longer to resolve applications problems -	Short of returning to the original six-month time frame, recommendations include: * Dry run execution of key M&O processes by Unisys staff in a test or sandbox environment with outcomes evaluated by KPMG, OIT, and PMO * Dry run execution of M&O processes	High	Retired

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
		<p>KPMG to Unisys staff. Unisys staff, many of whom are Speridian partners who were involved in the architecture and development of KOLEA, have demonstrated a fundamental understanding of KOLEA and ask appropriate questions. Due to their existing knowledge of the KOLEA application, they have focused on changes or differences between the application as they knew it and how it exists currently. IV&V inquired as to the steps being taken to afford Unisys opportunity to run the system before the KPMG contract ends. The Unisys plan includes shadowing KPMG staff in the execution of seven key processes. There is insufficient time available to shadow all M&O processes.</p> <p>Update 11/12/18: The ASI Transition successfully completed on 10/14/18. DHS has mitigated unforeseen downstream issues by contracting with KPMG through January 2019 to provide as-needed</p>	<p>resulting in the appearance of or actual failure of M&O takeover. Part of the risk is to the State's political capital or image, as well as to providing MAGI/Traditional eligibility determinations.</p>	<p>involving ESI support/activity * Retain KPMG resources post contract expiration to ensure knowledge is accessible for ASI staff during the initial M&O period.</p>		

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
		supplemental support. Additionally, the vendors held targeted knowledge transfer sessions, conducted shadow runs of 7 key processes, and Unisys brought on KOLEA knowledgeable staff from Speridian.				
Lack of Advance Notification for KT Sessions Schedule	Risk	<p>KT session meeting notifications are being scheduled with short fused notifications to attendees, either same day or late evening notification for next day KT sessions.</p> <p>Update 9/21/18: Meeting invites were sent in advance for the 11 remaining KT sessions, including the upcoming KT 5 on OBIEE on 9/25, and KT 6 on Batch Job Operations on 9/26. This appears to be a one-time occurrence as the initial sessions were getting set up, and this finding is now closed.</p>	When meeting schedules are not properly scheduled in advance, key attendees may be unable to attend and therefore not provide critical KT information. In this case, it is more likely to occur with MQD or OIT staff or key KPMG staff, given that Unisys M&O staff are fully dedicated to the effort. With the shortened time frame, it is imperative that all necessary, critical information be provided to Unisys.	If a verbal or informal email was communicated to attendees to ensure attendance the times were, at minimum, kept clear to ensure attendance of a key stakeholders until formal meeting requests are sent out. We recommend a verbal during KT/ session or informal email be communicated next meeting time/date to attendees to ensure attendance.	Medium	Retired
Communication Between ASIs	Preliminary Concern	During the early KT sessions, there were points where the new ASI stated they needed a moment to verify if the slide topic being presented was on	With the condensed transition period it is vital that the Incoming SI's objectives be addressed during the KT and other	There should be a process between the Incoming SI and Outgoing SI that ensures the communication flow	Medium	Retired

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
		<p>their list of objectives to be covered by the Outgoing ASI. This brings to question the process/ communication between the vendors regarding objectives that new ASI requested be covered during KT and other sessions. The new ASI should work to ensure their objectives are clearly communicated to and covered by the Outgoing ASI in the turnover sessions.</p> <p>Update 10/14/18: Unisys has now received the KT presentations prior to the KT meetings, and communications between the vendors has improved.</p>	<p>sessions. It is not clear if the Outgoing SI presenters have knowledge of these objectives as it relates to the presentation topics. If the Incoming SI objectives are not shared with Outgoing SI for the ALL sessions and addressed the sessions will not be as efficient and could lead to repeat sessions, or outside meetings/discussions for topics which could have been addressed during sessions. In addition, with the compressed timeline, there is a risk that there will not be time for additional meetings/ or sessions.</p>	<p>to all key personnel that coordinate the KT and other sessions have access and knowledge of the Incoming SI's objectives so sessions are more effective for both and avoids repeat sessions/meetings.</p>		
Access to tools	Preliminary Concern	<p>Access to certain tools should be allowed sooner rather than later. It was discussed that Unisys does not have access to ALM or Service center yet.</p> <p>Update 11/6/18: It was originally discovered that access to the tools necessary for Unisys to do their job was going to be pushed out until after the transition completed, as there had been a server</p>	<p>Due to the reduced transition timeline it is critical that Unisys has access to all of the tools necessary to be efficient in supporting the client. If they have access to the tools now they will be able to take over and gain efficiencies quicker for each tool used to support KOLEA.</p>	<p>Provide access to Unisys for all tools now. ALM, Service Center, batch, etc.</p>	Low	Retired

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
		issue which prevented many of the Unisys user ID's from being populated. This was accepted by the project. However, the issue has since been resolved, and a spreadsheet was shared with IVV verifying that all ID's have been created for the Unisys team.				
Maintenance and Operations Management						
Turned over KOLEA performance testing scripts will not be usable	Risk	KPMG has turned over existing KOLEA performance testing scripts but since they were written in an older version of the tool they will likely not be usable by BIAS or Unisys.	BIAS will need to implement their own tools, scripts, and processes for performance testing, with the support of Unisys. Performance testing is a key step in the testing cycle to ensure that the application will be able to support throughput and user loads in production. If performance testing is not performed, there is a risk that the system will fail under heavy user loads, or have slow response times which negatively affect the user experience.	Request BIAS to prioritize the development of performance testing scripts and work with Unisys to implement any performance tuning changes.	Low	Open

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
Automated testing scripts will not be turned over	Risk	<p>KPMG has stated that they will not be turning over existing KOLEA automated testing scripts/tools as they are proprietary. KPMG has provided manual regression test steps.</p> <p>Update 2/13/2019: Although KPMG ultimately provided the automated testing scripts to the State in early January, the scripts were not usable due to an Oracle Application Testing Suite (OATS) versioning problem. Unisys has created a proof of concept for automated testing which uses Selenium and Robo Framework for smoke test scripts. Additional automation of regression test scripts is planned for the future. This low priority risk remains open due to the unexpected need to recreate the test scripts.</p>	<p>Unisys will need to develop new automated testing scripts/tools to support the platform testing needs. Automated testing provides a powerful tool for regression testing when deploying new code, which can help identify if changes have negatively impacted any existing code. Reliance on manual testing can put an unnecessary burden on DHS testers and lead to an increase in UAT release bugs. Automated test scripts could also assist BIAS with smoke testing and reduce or eliminate the involvement of Unisys for validation in some ESI activities.</p>	Request Unisys to work quickly to develop automated testing scripts.	Low	Open
Unisys already familiar with KOLEA	Finding – Positive	The Unisys project team includes many technical resources that were part of the original incumbent ASI team that built KOLEA including the previous and now current system architect.	Unisys' demonstrated knowledge of KOLEA has accelerated knowledge transfer sessions and increased stakeholder confidence in a smooth transition/turnover. Many	N/A	N/A	N/A

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
		Unisys partnered with the incumbent ASI subcontractor (Speridian) that helped architect and develop KOLEA up until 2015.	concerns over a shortened turnover timeline have been alleviated due to their deep knowledge of many aspects of KOLEA technology, business rules and processes.			
Operational Details Not Discussed in KT Sessions	Preliminary Concern	<p>During KT sessions it is concerning that Unisys is not asking questions that are specific to operational support. Questions such as, Escalation contacts, outage notifications process, list of third-party contacts etc. Where is the process documented? Can documentation be provided?</p> <p>Update 10/29/18: This concern can be retired. After the preliminary concerns were reviewed with the client, Unisys began asking the necessary questions. The links for documentation were included in every knowledge transfer session and an Interactive SharePoint site was established with documentation from KPMG. It was explained that Unisys is providing guidance regarding which knowledge transfer</p>	If an outage occurs for an interface for example and it is a critical interface this will impact benefit recipients if data is not transferred in a timely fashion. understanding the support model and process will assist Unisys if an outage occurs.	Unisys should not only have KT sessions with KPMG, but it appears they should be having them with the ESI as well. Process documentation/ links should be provided before a KT session, so Unisys has time to review the process and determine if they have questions.	Medium	Retired

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
		topics they want KPMG to go over.				
Limited historical defect traceability (HPALM export)	Risk	<p>KPMG will only turn over limited exports from their ALM tool (HPALM) to Unisys. Extracts will include: all defects that were implemented in prod, all open defects in UAT (with attachments), all data fixes (with attachments).</p> <p>Update 2/8/2019: The IV&V team understands that Unisys received 3 additional extracts with more comprehensive HPALM content from KPMG, which Unisys used to fill in the gaps on missing ALM defects. This finding has been retired.</p>	Defects can require many man hours of research and testing to determine a root cause and to resolve the problem. Details of previous system defects/problems are often leveraged by M&O providers to quickly diagnose problems that may have occurred before. Currently, it is unclear if the HPALM extracts KPMG provides will be in a form that will allow Unisys to effectively leverage this information as a knowledgebase of defect/problem resolutions and lessons learned. This could slow resolution of new defects.	Unisys should assess HPALM extracts/attachments that have been turned over, identify gaps, and request additional extracts (as needed) before KPMG rolls off the project.	Low	Retired

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
Configuration and Release Management						
Lack of Release Shadowing for Major Releases	Risk	There were no major releases during the transition period for Unisys to shadow KPMG to witness how major releases are conducted. There may be challenges inherent in the release process that have not been documented or anticipated, and may not be encountered until KPMG's support period has ended. For example, during the KT sessions, Unisys asked about the clustered vs. non-clustered environments and how each is used in non-production vs production. These questions were addressed but will not be experienced by Unisys in practice until the next major release, which is likely the Identity Management (IDM) upgrade project scheduled for the end of January 2019. Also, there is no sandbox environment for Unisys to utilize tools, or mockup of a release to shadow KPMG for release process knowledge transfer. IV&V understands that this risk is partially	Without an opportunity to shadow and learn the environment and release process, Unisys may not be able to fully and confidently perform upgrades and changes into production. This is a significant area for Unisys to learn, and shadow for knowledge transfer and transition. Unisys should have a solid understanding of the environments, which are used for releases and understand the current process steps used by KPMG. Unisys should have an opportunity to ensure understanding and execution of successful release processes and possible production issues.	In lieu of conducting major mock releases, KPMG should provide guidance and transparency on the release and environment management process to ensure Unisys has a firm understanding of the processes. IV&V also recommends having Unisys follow through with documenting a comprehensive Release Plan that expands and contains detailed processes and procedures. Unisys is mitigating this risk by hiring staff that previously worked on KOLEA and are familiar with the code and release deployment process. However, documenting the comprehensive Release Plan and related processes and procedures are vital to sustain KOLEA and for new staff that do not	Medium	Open

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
		<p>mitigated by Unisys' demonstrated understanding and expertise in the related M&O activities. Further, Unisys has documented release management processes in their M&O Plan which continues to get refined with DHS. This lends credibility to their ability to handle a major release in the future despite not having the chance to shadow the process, but does not fully mitigate the risk.</p> <p>Update: 12/10/18: Unisys is mitigating this risk by bringing on staff with prior experience conducting major release deployments for KOLEA. Unisys also created an M&O Plan which includes additional high level details related to the Release Management process, but will need to be augmented with process step details including roles and responsibilities so that tasks and communication handoffs are clearly understood.</p>		have a KOLEA background.		

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
Configuration Management Details are Clearly Defined	Finding – Positive	The Configuration Management process is laid out well in the Release and Configuration Management document. Flow charts and snapshots from Subversion are well documented and provide a clear definition for the development team of how the code promotion process works.	This is a very important document as it lays down details of configuration management and is referred to in many places. It is a good reference guide for the development team to understand the overall code check-in and check-out procedures.	N/A	N/A	N/A
ASI attention to platform and process improvements	Finding – Positive	ASI has stated their intention to improve existing M&O processes and quality standards. For example, they will be implementing an additional environment for SIT (System Integration Testing) into the path to prod M&O development process.	Implementing System Integration Testing into the SDLC provides an additional layer of testing that typically focuses on tests that involve interface testing or additional testing executed by the SI in an environment that more closely mimics the production environment. This practice can increase the quality of testing and reduce defects in UAT. Reduction of defects in UAT can reduce the level of effort required of DHS UAT testers as there should be less defects for them to contend with and manage.	N/A	N/A	N/A

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
Missing Effective List of Changes in Upgrade/Release	Issue	<p>There is a lack of a stable process of documenting changes being entered into an upgrade/release. A lot is occurring on a mutual understanding with DHS. So, if someone wants to track down the changes in a release, there will be digging involved.</p> <p>Update: 11/01/2018: The Unisys team has a good grasp on the list of current changes. They are awaiting DHS prioritization of these and will document the process in the Release Plan to be included as part of the M&O Plan.</p>	There needs to be an amalgamated change/release process. Traceability of changes is critical to understanding the changes applied and leads ultimately to customer satisfaction. Transparency plays an important role here.	Unisys to adapt the process and maintain a master list of changes being entered into an upgrade/release. It can easily be maintained either in an Excel file/ or a dashboard and would be good to achieve customer approval.	High	Retired
Release Management Process is Missing DHS Activities	Risk	Unisys has not defined a Release Management process nor gained input from DHS on how best to prioritize M&O work items. A general deployment process is captured in the Configuration Management documentation; however, the documentation does not contain key details such as types and frequencies of releases, or prioritization standards that	Without documenting all steps of the Release Management process (including the client activities), the client may be unaware of their obligations. Transparency of RM processes will be reduced. Further, new resources joining the team, as well as current team members, may be unaware of the extent of customer involvement	Create a separate Release Management Process. It should define at least the following: <ol style="list-style-type: none"> 1. Type of Releases - Major/Minor/Emergency 2. Frequency of Releases 3. Workflow of Defect being assigned to a Release 4. Workflow of Change Request being 	Medium	Retired

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
		<p>will be used to guide Unisys decisions.</p> <p>Update 2/8/19: Unisys updated the M&O Plan to include additional release management details, including a release calendar, MQD responsibilities matrix, and details about MQD involvement and prioritization in the process. This risk is now retired.</p>	<p>and/or their own obligations. It is important to understand the prioritization process and assignment of Defects and Changes to various releases. The important benefits are:</p> <ol style="list-style-type: none"> 1. Ensuring the DHS prioritized list of defects and changes are being worked in the scheduled release 2. Meets customer expectations 3. Avoids unapproved software code (which can cause further errors) being slipped into a release and deployed 4. Consistent understanding of the process across the development team 	assigned to a Release		
Software Licenses	Preliminary Concern	Are there any licenses that need renewal/special handling due to the transition – switch license holders, etc. DHS owns all the licenses, but IV&V noted that some had expired because they were not tracked properly. There will/should be a time	If Unisys does not have valid licenses to use/modify all required components of the application, then they may not be able to complete transition activities.	Validate the software licenses are available for Unisys during the transition period and into Maintenance and Operations.	Medium	Retired

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
		<p>when Unisys will be using the test environments while KPMG is using prod, will more licenses be needed during that time? IV&V noted that ESI vendor is responsible for coordinating between vendors; but they didn't focus on this due to stabilization.</p> <p>Update: 10/24/2018 - Unisys confirmed that the ESI is responsible for all software licenses, not the ASI. Further, the ESI has all software account codes that are required in the event a Problem Incident Ticket is necessary to engage the vendor in problem resolution.</p>				
Configuration Settings and Detailed Runbooks are Not Available	Preliminary Concern	Observed that the presentation was lacking in detail specific to the configuration of the environments and the data that resides in the environments without these details it will be difficult for Unisys to make decisions on how best to proceed with each environment. "Best level procedures" appear to be	If Unisys is not provided with specific details surrounding the environments or daily work products it could cause them to make significant mistakes that could potentially cause issues with the next release, or data fixes.	Provide more detail in the configuration of the environments and "best level procedures" to Unisys.	Medium	Retired

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
		<p>daily work products that should be shared.</p> <p>Update: 10/30/18: KPMG provided the requested detailed documentation to Unisys. While this documentation was light on some details, it provides additional info and Unisys confirmed that it will be enough for them to complete their responsibilities.</p>				
Quality Management						
Unclear / Undocumented M&O Details May Invoke a Problem and/or Delay Problem Resolution	Risk	The ASI transition is complete and, for the most part, Unisys seems capable and well positioned to adequately perform M&O. However, given KOLEA's complexity (employing multiple technologies) and that turnover activities were accelerated due to a significantly reduced turnover time frame, technical details could have been overlooked. Some KOLEA processes have yet to be attempted by Unisys (e.g., some yearly batch processes), and therefore any gaps in the	If important technical details were overlooked during turnover Unisys may experience delays in problem resolution and decreased productivity. This risk will be exacerbated once KPMG is no longer available for support since there will be no one for Unisys to turn to, and they will have to research and/or reverse engineer the solution.	Unisys should make a concerted effort to dig deeper into KOLEA code and configuration before KPMG rolls off the project to identify details that need clarification. This should include focusing on KOLEA processes that have yet to been attempted, conducting dry-runs of those processes, and enabling direct contact between KPMG and Unisys technical SME's instead of relying on	Low	Open

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
		<p>documented process will not be identified until they are executed. For example, Unisys recently spent some time looking for missing OAG scripts only to learn from KPMG that the functionality was implemented in OAG <i>configurable policies</i> and not OAG <i>scripts</i>. This level of detail was not covered in KT sessions and may be symptomatic of other detailed information that is not documented. The IV&V team acknowledges the compressed transition time frame and understands that both KPMG and Unisys took appropriate steps to transition available knowledge within that window.</p> <p>Update 2/8/2019: The IV&V team understands that additional knowledge transfer sessions were held in January along with pre-cutover and cutover activities to provide additional information to Unisys.</p>		formal meetings for Q&A.		
Well-organized and Presented KT Sessions	Finding – Positive	KPMG conducted well-organized Knowledge Transfer (KT) sessions,	Clear explanations and a supportive atmosphere should help ease the	N/A	N/A	N/A

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
		including complex areas such as Enterprise Content Management (ECM). The KT sessions provided clear descriptions of the overall architecture and environments, as well as details about challenges faced during implementation.	transition difficulties and ensure stable support of KOLEA.			
Missing Master List of Issues/Defects	Issue	<p>The new ASI does not have a clear understanding of what the outstanding defects and enhancements are for KOLEA that they may be responsible for going forward, as they do not have visibility into the current ALM tracking tool.</p> <p>Update: 11/1/2018: Unisys team confirmed they can now see the export of the existing ALM instance and are working to install their own ALM instance and import all existing items into their instance. From this access, Unisys has identified 350 potential system modifications that they will review and work with DHS to prioritize as they go forward with M&O.</p>	Without visibility into the existing defects and enhancement requests or an understanding of the work already done between DHS and the outgoing ASI to investigate, re-work will be necessary and backlog resolution will be delayed.	<p>Recommendation is to create a process of monitoring the issues:</p> <ol style="list-style-type: none"> 1. Issues should be tracked in ALM 2. Weekly Reports can be taken out for New, Open, IN Progress, Closed Defects 3. Master List of Open Defects (at any given time) can be set in ALM (so that Customer can also view and run the report at their discretion) 	High	Retired

Summary	Finding Type	Statement	Significance/Context	Recommendation	Priority	Status
Lack of Content - Liferay and OPA Handbooks	Preliminary Concern	<p>Documentation related to Liferay Handbook and OPA Handbook lacks context and introduction for where the components fit in the KOLEA architecture. It only has links and URLs which means readers must already have a strong understanding of KOLEA before using the documents.</p> <p>Update: 11/1/18: Unisys confirmed that their teams for Liferay/ OPA have enough background knowledge about the components to use the documentation as-is. However, they agreed that it would be very difficult for a brand-new person or vendor to utilize the documentation.</p>	A new person on the project won't automatically relate without an introduction and some more content explaining about Liferay and OPA. Content providing context could help to explain the relevance, usage, and applicability of the components.	<p>Sections related to:</p> <ol style="list-style-type: none"> 1. Purpose 2. Assumptions 3. Relevance/Usage <p>should be at a minimum be added to the documents.</p>	Low	Retired

3 Approach

PCG focused on key process areas to ensure a comprehensive assessment. These process areas included:

- Project Management
 - Project Staffing / Organization
 - Project Management Plans and Procedures
 - Risk / Issue Management
 - Communication Management
- Maintenance and Operations Management
 - M&O Activities
 - Runbooks and operational handbooks
- Configuration and Release Management
 - Change Management
 - Defect Management
 - Configuration Management
 - Release Management
- Quality Management
 - Deliverable Quality (comprehensiveness, context, accuracy)
 - Knowledge Transfer Quality

PCG's approach to conducting the assessment was comprised of these major tasks:

1. Initiate and Manage the Project

During the project initiation task, PCG conducted a joint kickoff session with the ASI to review the project background, approach, and objectives. PCG met with the DHS PMO, the incoming ASI, and the incumbent ASI to refine the project scope, address various planning considerations, and review what participants could expect from the IV&V Assessment Team. PCG also identified stakeholders and confirmed points-of-contact.

2. Discovery

During this task, the PCG project team gathered and reviewed documents (e.g., organization charts, plans, existing procedures, technical artifacts, development work products, vendor

contracts, content from Knowledge Transfer sessions) specific to each process area. In addition to reviewing existing documentation, the PCG project team conducted interviews with staff from DHS and the ASI. PCG also participated in recurring weekly project meetings to observe interactions between the various stakeholders.

3. Research and Analysis

Based on information discovered in the previous step, the PCG project team turned to research and analysis to identify findings and recommendations. Initial questions and observations that arose during our review and assessment of project documentation and processes were discussed with stakeholders.

4. Clarification

Following our research and analysis activities, we sought additional clarification and conducted further research as needed. PCG held several internal sessions to discuss and finalize our findings and recommendations.

5. Document

Findings and recommendations were documented in the Findings Log. Throughout the observation and assessment period, PCG provided our findings to DHS and the project team in as near to real-time as possible to allow the stakeholders to adjust quickly during the transition to avoid realization of risks. As a result of this interactive process, many findings were retired, or closed, during the assessment period prior to the release of this report.

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.

Interviews and Meetings:

Table 3: Interviews and Meetings

Topic	Attendee(s)	Date
Kick-Off for BES and ASI Transition Assessment	DHS and Unisys	8/30/18
KOLEA Functional Overview and Demo	DHS and Unisys	8/31/18
M&O Governance – ESI Knowledge Sharing with Unisys	BIAS and Unisys	9/4/18
KOLEA ASI Transition Kick-Off	All stakeholders	9/11/18
BES Project / Unisys Orientation Session	All stakeholders	9/13/18
MQD Business Process Knowledge Transfer Meetings	DHS and Unisys	9/4/18, 9/5/18, 9/7/18
KPMG — Legacy ASI Patching, Batch, ESI Support	Ajay Gupta and Paresh Shah	10/10/18
DHS Information Security – Enterprise Platform Vulnerability Status	Tommy Ku	10/11/18
DHS PMO – DHS organizational changes	Tracey Laride	10/24/18
Unisys – Transition and M&O Technical Lead	Brian Kodama	10/24/18
DHS – DHS Security Efforts	Lim Young, Compliance Office	10/30/18
Unisys – ASI Transition Activity Status	Kalyan Raman, Operations Manager	10/30/18
PACXA – ESI/ASI Interactions	Steve Balistreri, Architect	10/31/18
Medicaid Weekly Transition and Open Issues	Project team	10/29/18
KOLEA ASI Turnover - Cutover Checkpoints	Project team	10/8/18, 10/10/18

Topic	Attendee(s)	Date
KOLEA ASI Turnover - Final Cutover Checkpoint Meeting	Project team	10/14/18
KOLEA ASI Turnover - Re-Assignment of KPMG Assigned SN Tickets Planning Meeting	Project team	10/11/18
KOLEA ASI Turnover Weekly Status Meeting	Project team	10/5/18, 10/12/18, 10/19/18, 10/26/18
KOLEA ASI Turnover - Week Day Batch Shadowing Session	Project team	10/11/18
KOLEA ASI Turnover - Non-Production Mock Deployment Shadowing Session	Project team	10/12/18
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	10/30/18
BES Weekly Status Meetings	Project team	10/17/18, 10/24/18, 10/31/18
Enterprise Operations Committee	Leadership Team	recurring

Deliverables and Artifacts Reviewed:

Table 4: Deliverables and Artifacts Reviewed

Deliverable Name	Deliverable Date	Version
40.121.2 - Requirements Statement Appendix 1 - KOLEA Statement of Resources		
40.121.2 - Requirements Statement Appendix 2 - KOLEA System Documentation Matrix		
40.213 SPMP Configuration Management Plan	2013	V2.0
Appendix 4 Operational Document: Configuration Management	8/1/17	V2.0
ASI Transition Application Documentation Roadmap documents (12 documents)		1.4, 1.5, 1.6, 2.3
KOLEA ASI Turnover Overview/Knowledge Transfer Plan		V2.1
BES RFP		V12.1
DHS Final RFP		
HP ALM Export Criteria - KPMG		
Kauhale On-Line Eligibility Assistance (KOLEA) Project Appendix 4 Operational Document: Configuration Management ES RFP	8/1/18	V2.0
Kauhale On-Line Eligibility Assistance (KOLEA) Project ASI Transition – Application Documentation – Interfaces Interfaces 11 DSDs (DLIR, PARIS, RIDP, DPS, DLIR, HSAG, HYCF, HPMMIS, Mass Change, VLP, DLIR Workers Comp, DEERS)	Various	Various
KOLEA ASI Operations Support Model		

Deliverable Name	Deliverable Date	Version
KOLEA Regression Test Cases – KPMG 08Oct18_ConsolidatedScriptsWithChanges – KPMG	Various	Various
KPMG Design Docs Update After 2015	Various	Various
KPMG Turnover Plan		V4
Open Issue Tracker		
Operation Document: Defect Management Process, Appendix 6	7/31/17	V1.5
Release Notes 4.080	9/2018	
Siebel Overview Unisys transition plan (BM-1 Medicaid EE Solution MO Transition Plan.doc)	10/23/18	V1.5
Smoke Test Scripts – KPMG	Various	Various
BM-4 - Medicaid E&E Solution M&O Plan	Various	V1.0 – V1.5

Appendix B – Findings and Recommendations Log

The Findings and Recommendations Log is included in every Assessment Report. The development and format of this tool facilitates communication during IV&V assessments and is used to track areas for improvement. The Findings and Recommendations Log includes the following:

- Summary – Short title for the Finding.
- Finding Type – Identifies the type of Finding. The possible choices are:
 - Preliminary Concern – An item we believe may pose risk to the Project, but more analysis and a better understanding of the subject area is necessary before classifying the item as a formal risk or issue.
 - Risk – An event which, if it were to occur, would cause an impact to the project time, scope, or cost.
 - Issue – A risk that has been realized or come to pass.
 - Finding – Positive – A statement based on a fact that supports the Project. Typically, these are raised to acknowledge adherence to standards and Project guidelines that are identified as part of an assessment or evaluation.
- Statement – Supporting evidence and description of the Finding/risk. If the observation identifies a risk, the risk statement is presented.
- Significance/Context – High level description of the significance or impact of the Finding to the Project.
- Recommendation – Includes the recommendation to mitigate identified observation and/or risk.
- Priority – If the Finding introduces risk to the Project, a Risk Priority will be assigned. PCG will identify the risk priority as High, Medium, or Low. If there is not a risk identified, the text “N/A” or “preliminary” will be entered.
- Status – Status of the Finding (as opposed to status of an associated risk.) A positive or neutral Finding may not have an associated risk.
 - Open – the Finding is open pending acceptance of the risk or Finding, or closure based on action or additional information.
 - Watch – the Finding is open pending continued observation or monitoring.
 - Retired – the State has responded to the Finding and/or PCG has observed that the Finding has been resolved and no further action is needed.

Appendix C – Priority Assignments

A priority is assigned to all risks and issues identified by IV&V.

Risks

A risk is “an uncertain event or condition that, if it occurs, may have a positive or negative effect on a project’s objectives”. IV&V will identify risks with negative effects and expand the definition to include both conditions which may occur and those which may not occur (e.g. lack of a well-defined requirements traceability process could lead to delivery of an incomplete system, requiring costly and time-consuming rework).

A key to risk management is understanding the potential risks to the project and ensuring that these risks and risk mitigation strategies are communicated to key project stakeholders on an ongoing basis. Risk analysis should begin early during project planning by determining or identifying the factors that may affect the project. Risk can impact a project in many ways: project quality, scope, cost, and schedule. Proper risk identification seeks to determine how the risk may affect the project and to document the project area(s) impacted by the identified risk.

Once risks are identified and characterized, both qualitative and quantitative factors are examined. IV&V’s analysis considers the project conditions to determine the probability of the risk being realized and the impact to the project if it is realized. Overall the risk priority is determined by multiplying the probability rating times the impact rating. IV&V determines the risk priority using a risk-rating matrix (see **Figure 3: Risk Rating Matrix** Error! Reference source not found. below) which determines the priority of each risk based on an assessment of probability of occurrence and the magnitude of impact.

Issues

An issue is a finding, often previously identified as a risk that documents an event that has occurred and caused negative impact to the project. IV&V issues, documented in the IV&V Findings Log, identify the event and its impact to the project.

An issue’s priority is determined by its impact on the project. The following table defines the issue priorities that IV&V uses when assigning a priority to an issue.

Eclipse IV&V® Exposure Matrix

	MAGNITUDE OF IMPACT				
Probability of Occurrence	1 Negligible	2 Minor	3 Moderate	4 Significant	5 Critical
5 Probable (80%-99%)					
4 Likely (60%-79%)				HIGH	
3 Possible (40%-59%)		MEDIUM			
2 Unlikely (20%-39%)	LOW				
1 Improbable (1%-19%)					

Figure 3: Risk Rating Matrix

Table 5: Risk Priority Definitions

Eclipse IV&V® Risk Priority Definitions

RISK PRIORITY	DEFINITION
HIGH	Possibility of substantial impact to product quality, manageability, 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.
MEDIUM	Possibility of moderate impact to product quality, manageability, cost, or schedule. Some disruption is likely and a different approach may be required. Mitigation strategies should be implemented as soon as feasible.
LOW	Possibility of slight impact to product quality, manageability, cost, or schedule. Minimal disruption is likely and some oversight is needed to ensure that the risk remains low. Mitigation strategies should be considered for implementation when possible.