BUREAU OF INDUSTRY AND SECURITY

Full Transition to the Nation's Single Export Licensing System Is Uncertain

FINAL REPORT NO. OIG-16-037-A
JULY 5, 2016

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Office of Audit and Evaluation

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Office of Inspector General
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July 5, 2016

MEMORANDUM FOR: Eric L. Hirschhorn
Under Secretary for Industry and Security
Bureau of Industry and Security

FROM: Allen Crawley
Assistant Inspector General for Systems Acquisition
and IT Security

SUBJECT: *Full Transition to the Nation's Single Export Licensing System Is Uncertain*
Final Report No. OIG-16-037-A

Attached is our final report on BIS' transition of its electronic processing of export license applications to the Department of Defense interagency export licensing system, U.S. Exports System (USXPORTS). We began this audit with two objectives: to determine whether BIS was (1) effectively and efficiently managing its transition toward using USXPORTS to perform export licensing processing and (2) using effective and efficient software development practices for the Commerce USXPORTS Exporter Support System (CUESS). However, during our fieldwork, we decided to forgo analysis on the second objective, as CUESS is currently in production with no plan for major development work on the system.

We found the following:

- *Ineffective coordination and collaboration between BIS and DTSA led to project delays.* Major challenges that led to delays resulted from overall ineffective coordination and collaboration between BIS and DTSA—specifically, (a) disagreements over data formats for synchronizing systems, (b) inadequate control over change requests, (c) inadequate allocation of resources, (d) inconsistent feedback during development, and (e) insufficient coordination during testing.
- *BIS' unresolved issues with USXPORTS and continued use of CUESS for license processing leave USXPORTS' transition uncertain.* BIS identified numerous issues with USXPORTS during end-to-end testing and concluded that USXPORTS was unable to support its internal operational needs—but BIS and DTSA did not sufficiently resolve these issues. BIS implemented its own license processing capabilities (i.e., the Licensing Officer Access module) within CUESS as a backup to USXPORTS. However, as CUESS is a separate system from USXPORTS, the inefficiencies identified by the ECR task force of having separate systems remain.

We have summarized BIS' response to our draft report and included its entire formal response as appendix C. The final report will be posted on OIG's website pursuant to section 8M of the Inspector General Act of 1978, as amended.

In accordance with Department Administrative Order 213-5, please provide us your action plan within 60 days of this memorandum. The plan should outline the actions you propose to take to address each recommendation.

We appreciate the cooperation and courtesies extended to us by your staff during our audit. Please direct any inquiries regarding this report to me at (202) 482-1855 or Angela Hoffman, Director, Systems Acquisition and Development, at (202) 482-5337, and refer to the report title in all correspondence.

Attachment

cc: Daniel O. Hill, Deputy Under Secretary for Industry and Security, BIS
Kevin J. Wolf, Assistant Secretary for Export Administration, BIS
David W. Mills, Assistant Secretary for Export Enforcement, BIS
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Report In Brief

JULY 5, 2016

Background

The Bureau of Industry and Security (BIS) has responsibility over U.S. export control in order to protect national security, ensure international treaty compliance, and promote U.S. technical leadership. To fulfill this export role, it grants licenses and enforces restrictions for controlled U.S. goods (e.g., chemicals, computers, sensors). BIS works in partnership with the Departments of State and Defense, as well as other federal agencies that share similar missions and interests, to grant export licenses for dual-use items.

Since 2010, BIS has been working to transition its electronic processing of export license applications to the Department of Defense interagency export licensing system, U.S. Exports System (USXPORTS). As part of the President's August 2009 Export Control Reform (ECR) Initiative, BIS and the Department of State were directed by the National Security Council's Interagency Policy Committee to transition licensing processing to USXPORTS.

Why We Did This Review

We began this audit with two objectives: to determine whether BIS was (1) effectively and efficiently managing its transition toward using USXPORTS to perform export licensing processing and (2) using effective and efficient software development practices for the Commerce USXPORTS Exporter Support System (CUESS). However, during our fieldwork, we decided to forgo analysis on the second objective, as CUESS is currently in production with no plan for major development work on the system.

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WHAT WE FOUND

After more than 5 years and nearly $2.6 million spent on the effort, BIS export functions have not been fully transitioned to USXPORTS. As the transition did not occur as planned, BIS is now using CUESS to process export licenses. Even with the Interagency Referral Sub-System implemented—which enables other agencies to use USXPORTS to review the license applications and data BIS processes in the CUESS Licensing Officer Access, or LOA, module—BIS is still using its own system to process licenses. Therefore, the ECR goal of a single IT system for licensing still has not yet been achieved.

We found the following:

Ineffective coordination and collaboration between BIS and DTSA led to project delays. Major challenges that led to delays resulted from overall ineffective coordination and collaboration between BIS and DTSA—specifically, (a) disagreements over data formats for synchronizing systems, (b) inadequate control over change requests, (c) inadequate allocation of resources, (d) inconsistent feedback during development, and (e) insufficient coordination during testing.

BIS' unresolved issues with USXPORTS and continued use of CUESS for license processing leave USXPORTS' transition uncertain. BIS identified numerous issues with USXPORTS during end-to-end testing and concluded that USXPORTS was unable to support its internal operational needs—but BIS and DTSA did not sufficiently resolve these issues. BIS implemented its own license processing capabilities (i.e., the LOA module) within CUESS as a backup to USXPORTS. However, as CUESS is a separate system from USXPORTS, the inefficiencies identified by the ECR task force of having separate systems remain.

WHAT WE RECOMMEND

We recommend that the Undersecretary for Industry and Security ensure that

1. BIS establishes an Integrated Project Team for future systems development projects with other agencies (including DTSA), incorporating shared accountability.
2. BIS conduct a cost/benefit analysis on using the LOA module with the Interagency Referral Sub-System versus fully transitioning to USXPORTS.

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COVER: Detail of fisheries pediment, U.S. Department of Commerce headquarters, by sculptor James Earle Fraser, 1934

Introduction

The Bureau of Industry and Security (BIS) has responsibility over U.S. export control in order to protect national security, ensure international treaty compliance, and promote U.S. technical leadership. To fulfill this export role, it grants licenses and enforces restrictions for controlled U.S. goods (e.g., chemicals, computers, sensors).[1] BIS works in partnership with the Departments of State and Defense, as well as other federal agencies that share similar missions and interests, to grant export licenses for dual-use items.[2]

Since 2010, BIS has been working to transition its electronic processing of export license applications to the Department of Defense interagency export licensing system, U.S. Exports System (USXPORTS). As part of the President's August 2009 Export Control Reform (ECR) Initiative, BIS and the Department of State were directed by the National Security Council's (NSC) Interagency Policy Committee (IPC) to transition licensing processing to USXPORTS. The ECR initiative, which called for a comprehensive review of the nation's export control system, identified four major reforms needed to reduce inefficiencies: implementation of a single (1) control list, (2) primary enforcement coordination agency, (3) information technology (IT) system, and (4) licensing agency (see chart *Export Control System Inefficiencies*). The BIS transition to USXPORTS was directed as a key part of the third reform to implement a single IT system for export control.

Export Control System Inefficiencies

- Two controls lists administered by two different departments, resulting in confusion and jurisdictional disputes and causing delays
- Overlapping and duplicative enforcement authority
- Separate IT systems inaccessible to other licensing or enforcement agencies, resulting in lack of awareness about who has approved or denied export licenses for goods
- Three licensing agencies with separate policies and procedures, resulting in system gaps and different licensing requirements for similar products

To begin its transition to USXPORTS, BIS entered into an October 2010 memorandum of agreement (MOA) with the Department of Defense's Defense Technology Security Administration (DTSA) agency to develop the USXPORTS Expansion Project.[3] The agreement laid out a three-phased approach: phase one was designated for requirements definition; phase two for system design, development, and testing; and phase three for operations and maintenance. Under the agreement, BIS provides funding for BIS-specific enhancements to USXPORTS while DTSA is responsible for implementing them in USXPORTS. The overall goal of the project is to "evolve USXPORTS into the core of a single export licensing system that will be used by [the Departments of State, Commerce, and Defense], other Federal Departments and Agencies, and industry." [4] As outlined in the MOA, both parties

[1] See the Commerce Control List for a full list of the categories of goods controlled by BIS.

[2] *Dual-use* refers to commercial items that have both commercial and military or proliferation applications.

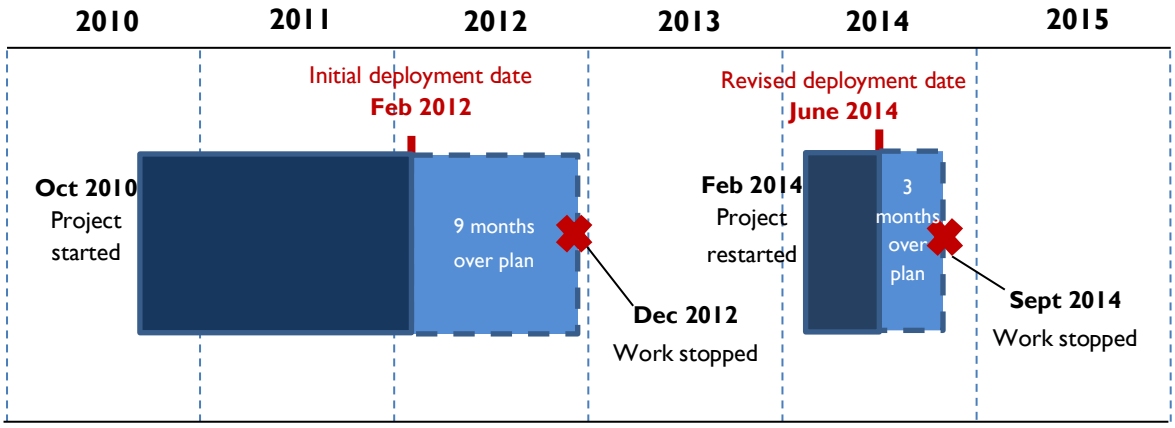
[3] A *memorandum of agreement* describes in detail the goals, specific responsibilities of, and action to be taken by each party to the agreement.

[4] See page 2 of the memorandum of agreement between BIS and DTSA–USXPORTS Expansion Project (October 2010).

agreed to work together to identify and approve requirements, ensure adequate testing, and incorporate existing BIS export control software into USXPORTS. Preliminary plans for the effort included BIS providing DTSA $1.3 million and transferring its license processing to USXPORTS by February 2012.

BIS and DTSA encountered delays on the project and the schedule slipped 9 months over plan until work stopped in December 2012—or 3 months after the period of performance under BIS and DTSA's agreement lapsed. BIS did not immediately amend its agreement and extend the period of performance with DTSA, citing lack of sufficient progress and uncertainty about the availability of funds due to fiscal year (FY) 2013 budget sequestration. As a result, BIS and DTSA did not begin discussions to resume the project until June 2013. Planning and negotiation over requirements, schedule, and cost continued until February 2014, when a new amendment was agreed upon and project development recommenced with a new deployment date of June 2014. However, the June 2014 deployment date was also missed, as end-to-end testing did not begin until June and was not completed until August 2014. Following completion of end-to-end testing, BIS concluded that USXPORTS was not ready to support BIS internal license processing. Work stopped again in September 2014, when the extended period of performance from the last agreement ended (see figure 1, below for delays throughout the project).

Figure 1. USXPORTS Expansion Project Timeline



Source: OIG analysis of BIS and DTSA information

After more than 5 years and nearly $2.6 million spent on the effort (we detail BIS' cost history on the project in appendix B), BIS export functions have not been fully transitioned to USXPORTS. As the transition did not occur as planned, BIS is now using its Commerce USXPORTS Exporter Support System (CUESS) to process export licenses.

CUESS is a BIS-developed system that supports BIS' export license administration and export enforcement functions, including classifying commodities, processing export license applications, granting licenses, and managing investigations and export enforcement cases. In 2013, BIS began to develop new functionality for CUESS, the Licensing Officer Access (LOA) module, as a backup to the license processing capabilities intended for USXPORTS. BIS determined that a backup was necessary because delays with USXPORTS resulted in BIS' continued reliance on its legacy Export Control Automated Support System (ECASS) for license processing. However,

ECASS needed to be decommissioned due to significant IT security weaknesses and costly operation. BIS transferred license processing to the LOA module in October 2014, making it possible to decommission the ECASS system in December 2014.

While BIS' immediate need to decommission ECASS was resolved, the bureau had not transitioned electronic processing of export licenses to USXPORTS. To move closer to this goal, BIS and DTSA amended their agreement in May 2015 for the sixth time, to implement the Interagency Referral Sub-System; this entailed approximate costs of $768,000 for planning and $100,000 for monthly operations and maintenance. The sub-system, deployed in October 2015, enables other agencies to use USXPORTS to review the license applications and data BIS processes in the CUESS LOA module. However, even with this sub-system, BIS is still using its own system to process licenses—and, therefore, the ECR goal of a single IT system for licensing still has not yet been achieved.

Objectives, Findings, and Recommendations

We conducted this audit to examine BIS' progress in transitioning to USXPORTS. We began this audit with two objectives: to determine whether BIS was (1) effectively and efficiently managing its transition toward using USXPORTS to perform export licensing processing and (2) using effective and efficient software development practices for CUESS. However, during our fieldwork, we decided to forgo analysis on the second objective, as CUESS is currently in production with no plan for major development work on the system. See appendix A for additional details concerning the objectives, scope, and methodology of our review. Also see appendix B for BIS' cost history on the project.

We found that

- project delays resulted from early challenges with technical issues and overall ineffective coordination and collaboration between BIS and DTSA at various points throughout the project (see finding I) and
- BIS and DTSA have not sufficiently resolved outstanding issues with USXPORTS license processing capabilities, resulting in an incomplete transition from multiple systems to a single one (see finding II).

I. Ineffective Coordination and Collaboration Between BIS and DTSA Led to Project Delays

The project to transfer BIS export license processing to USXPORTS has run longer than its originally planned implementation date by 4 years, while BIS has spent nearly $2.6 million on the project (almost twice the initial estimate of $1.3 million).[5] Some early delays during 2011 and 2012 were the result of technical challenges in migrating BIS data to USXPORTS—as the data had been housed in an outdated database system, in an inconsistent manner, over a 15-year period. More effort was needed to resolve these challenges than was originally expected. However, after 6 months of work and an additional $291,000 to the agreement, these issues were resolved.

Other major challenges that led to delays resulted from overall ineffective coordination and collaboration between BIS and DTSA—specifically, (a) disagreements over data formats for synchronizing systems, (b) inadequate control over change requests, (c) inadequate allocation of resources, (d) inconsistent feedback during development, and (e) insufficient coordination during testing.

A. Disagreements over Data Formats

BIS and DTSA committed to develop agreed-upon formats—referred to as data schemas—for transferring and synchronizing data between BIS systems and USXPORTS. Although BIS planned to have schema validation completed by February 2014, validation

[5] The initial estimated costs include the requirements and development phases.

continued up to May 2014. This delay resulted from disagreements between BIS and DTSA over the contents of the schemas and BIS delays in validating the schemas. According to BIS, DTSA questioned the necessity of some of BIS' data elements and BIS had to review DTSA's changes to the schemas line-by-line to ensure its needed elements had not been removed.

In addition, BIS encountered challenges formatting its data in accordance with the schemas. DTSA provided experts to assist with the effort; however, BIS officials explained that the experts were unfamiliar with BIS' systems and data structures. The issues were ultimately resolved, but delayed the start of BIS' end-to-end testing to June 18, 2014, which was 44 days later than planned. This delay represents 33 percent of the 133-day planned project duration, once it was restarted in 2014.

B. Informal Change Requests

BIS and DTSA mutually developed an agreed-upon baseline set of requirements for the project during the design phase. However, during 2011–2012 development, no official source or arbiter of requirements was established—resulting in inconsistent change requests that delayed progress. Best practices specify that projects should have designated appropriate channels or official sources from which to receive requirements.[6] These practices can help mitigate uncontrolled changes to applications that can result in project delays and increased costs. In contrast, we found that 2011–2012 BIS users' change requests were made informally during USXPORTS product reviews where new functionality was demonstrated. Because different sets of BIS users in various business roles attended the reviews, the changes lacked continuity between user groups. As a result, DTSA's efforts were focused on implementing these informal and inconsistent change requests and development progressed slowly. By February 2014, when the project was restarted, BIS had defined a governance structure that identified key user representatives to provide official change requests and validate requirements.

C. Insufficient Allocation of Resources

We found that, in 2014, BIS had difficulty applying adequate resources to address its data migration and synchronization challenges. BIS had initially identified the potential lack of sufficient resources for USXPORTS as a risk in the project's risk management plan. Because the majority of its development resources were focused on CUESS development, BIS officials later halted work on CUESS to dedicate more resources to USXPORTS—but not until just before end-to-end testing began.

In addition, BIS did not maintain a project manager whose time and responsibility was fully dedicated to the USXPORTS project throughout the life of the project. BIS began with a full-time project manager for its transition—but did not fill the position after the

[6]Capability Maturity Model Integration for Acquisition (version 1.3). Pittsburgh: Software Engineering Institute, 2010, 327.

project manager left 9 months into the project. DTSA officials asserted that the lack of a fully available BIS project manager limited the success of the efforts.

D. Inconsistent Feedback During Development

When development stopped in December 2012, BIS had only accepted 23 percent of the functional requirements DTSA had implemented in USXPORTS. This low acceptance demonstrates a significant difference between BIS' expectations of how requirements would be implemented and DTSA's implementation of them. To address this issue, BIS and DTSA worked from June 2013 to February 2014 to clarify requirements in preparation for the project's restart in February 2014. Once the project restarted, BIS and DTSA agreed on a project plan that included weekly meetings, system reviews, and user testing that allowed BIS to provide feedback on developed functionality. System reviews and user testing were to be conducted after completion of every two successive sprints (out of a planned total of six).[7]

BIS officials were unable to provide evidence that feedback on developed functions had been provided during the weekly meetings or systems reviews (except for the first meeting). Regarding user testing, three rounds of testing were planned. However, BIS officials could not provide evidence that testing results from its first round of testing were provided to DTSA. BIS did not complete the second round of testing after its officials concluded that the second test would not have been effective because USXPORTS lacked the functionality for meaningful tests. BIS did conduct the third round (the end-to-end testing) and provided feedback—but only after development was complete, when feedback could not influence future development.

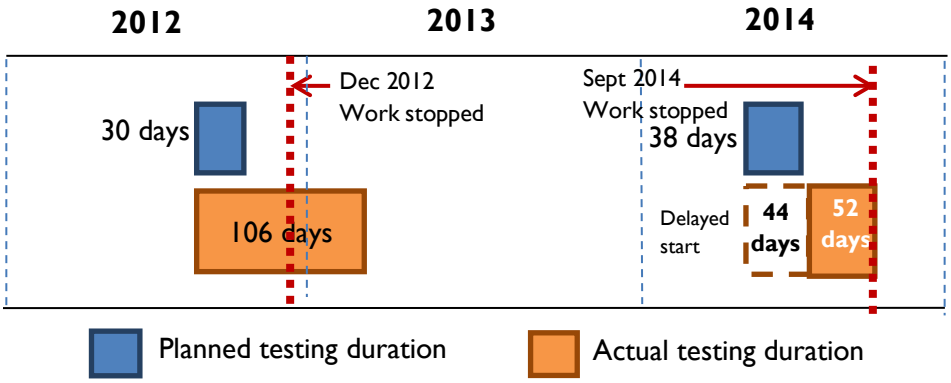
Insufficient feedback and testing likely contributed to BIS' dissatisfaction with USXPORTS—as gaps between BIS' needs and USXPORTS capabilities were not sufficiently conveyed during development, when they could have been better addressed during sprints. BIS officials acknowledged that, as the development effort progressed, communication between BIS and DTSA did not occur as planned; they noted that disagreements between the two agencies limited successful coordination.

E. Lack of Coordination During Testing

In 2012, BIS scheduled 30 days (October 15–November 16, 2012) to test USXPORTS. However, its assessments took 106 days (October 16, 2012–January 30, 2013), or 76 days longer than planned. Testing was delayed because BIS sent users to USXPORTS training during the testing window to address concerns expressed by DTSA officials that BIS users lacked familiarity with the system. When the project was restarted in 2014, BIS committed to (a) beginning end-to-end testing on May 5, 2014, (b) completing its testing in 38 days, and (c) going live on USXPORTS by June 16 2014. In actuality, the testing started 44 days later than planned and ended on August 8, 2014—taking 52 days to complete, or 2 weeks longer than planned (see figure 2).

[7] *Sprints* are short 2- to 4-week development cycles, with the goal of developing potentially deployable functions at the completion of each.

Figure 2. USXPORTS Expansion Project - BIS Testing Delays



Source: OIG analysis of BIS and DTSA information

We found that BIS and DTSA did not adequately coordinate testing during this period:

- **BIS and DTSA had challenges coordinating changes during testing.** During testing in 2014, BIS asked that changes be made once a week to allow time for completing a testing cycle each week. However, DTSA made changes during the week while BIS was testing. DTSA officials explained that making these changes was necessary to avoid additional delays. These changes caused BIS to question the validity of its completed tests and resulted in delays because BIS had to retest the system whenever unexpected changes occurred.

- **During testing, BIS did not have DTSA's onsite support.** We found that DTSA had offered to provide on-site support and training during the originally agreed-upon testing schedule (May 5–June 12, 2014), but BIS rejected the offer because the challenges with the data schemas had not been resolved. Because the testing began after the time period during which DTSA had agreed to provide support, BIS never received that support.

The disagreements and lack of coordination and collaboration between BIS and DTSA caused unnecessary delays on the project. Although BIS and DTSA assigned staff within each organization to work together to manage the transition to USXPORTS, they were not organized into an Integrated Project Team (IPT), which would have likely reduced the collaboration and coordination issues that were encountered. An IPT is a powerful tool for helping diverse stakeholders work together effectively by organizing a single team with "the different areas of expertise needed to develop a product, together with the authority and responsibility to design, develop, test, and manufacture the product."[8] To mitigate such delays in any future development efforts with other agencies, BIS should seek to establish an IPT with shared authority and responsibility for the project.

[8] U.S. Government Accountability Office, April 2001, *BEST PRACTICES: DoD Teaming Practices Not Achieving Potential Results*, GAO-01-510. Washington, DC: GAO, 11.

Implementation of an effective IPT following key best practices (see table 1) would have likely helped mitigate the issues identified in this finding. For example:

(1) An assigned team leader with authority over final decisions may have prevented the delays that arose from disagreements over the data schemas and changes applied during testing, because the project leader could have made and enforced final decisions on these points as opposed to each agency proceeding as it thought best.

(2) Delays related to informal change requests may have been reduced by having clearly defined roles, such as identifying who on the team was responsible for controlling application changes from the beginning.

(3) Working to build team consensus, shared vision, a common understanding of project goals, and implementation would have likely helped alleviate the gap between the implemented functions and BIS' acceptance of them.

(4) A team that was collectively responsible and accountable for the success of the project would have likely led to greater cooperation to overcome challenges as opposed to a focus on individual tasks.

Effective IPTs have been shown to be more efficient than traditional approaches.[9] They also better equip management to make decisions concerning competing demands.[10] In future efforts on joint projects, BIS should consider establishing an IPT in accordance with key best practices.[11]

[9] MITRE, October 2008. *Integrated Project Team Start-up Guide*. 08-1645. MITRE, 3.

[10] See page 11 of GAO.

[11] See MITRE; also, Software Engineering Institute, Capability Maturity Model for Development (version 1.3). Pittsburgh: Software Engineering Institute, 2010.

Table 1. Integrated Project Team (IPT) Key Best Practices

Best Practice	Description
The team is collectively responsible and accountable	Members of the IPT are collectively responsible for the completion of work products and performance is measured collectively.
IPT members build consensus	The team builds consensus and collaborates over project direction.
The IPT is provided decision making authority	The team is empowered with as much decision making authority over the project as possible. Clear rules are defined and followed for when decisions should be elevated beyond the IPT.
Shared vision and understanding of goals and implementation	Team members understand and commit to a shared vision. Goals are elaborated and team members share an understanding for how to implement them.
Team leader oversees the project	An IPT leader is selected (usually by the project sponsor or governing body) to oversee the project, coordinate and collaborate with team members, and has authority over final decisions. Oversight of the IPT is the IPT leader's top priority.
Member roles and responsibilities are clearly defined	Roles and responsibilities of the IPT members are clearly defined and they are empowered with decision-making authority to act on behalf of their respective organizations.
Necessary skills, expertise, and resources are available	The necessary skills, expertise, and resources are identified and engaged for the project.

Source: OIG analysis of the Carnegie-Mellon's Software Engineering Institute Capability Maturity Model for Development, Version 1.3 and MITRE Corporation's *Integrated Project Team Start-up Guide*.

Recommendation

We recommend that the Undersecretary for Industry and Security ensure that

1. BIS establishes an IPT for future systems development projects with other agencies (including DTSA), incorporating shared accountability.

II. BIS' Unresolved Issues with USXPORTS and Continued Use of CUESS for License Processing Leave USXPORTS' Transition Uncertain

BIS identified numerous issues with USXPORTS during end-to-end testing and concluded that USXPORTS was unable to support its internal operational needs. However, BIS and DTSA did not sufficiently resolve these issues. BIS implemented its own license processing capabilities (i.e., the LOA module) within CUESS as a backup to USXPORTS. However, as CUESS is a separate system from USXPORTS, the inefficiencies identified by the ECR task force of having separate systems remain. To address this issue, BIS amended its agreement with DTSA to develop the Interagency Referral Sub-System that would enable interagency referrals of license applications and data between CUESS and USXPORTS. BIS needs to assess the costs versus the benefits of continuing with this solution and compare that with re-focusing its efforts on its transition to USXPORTS.

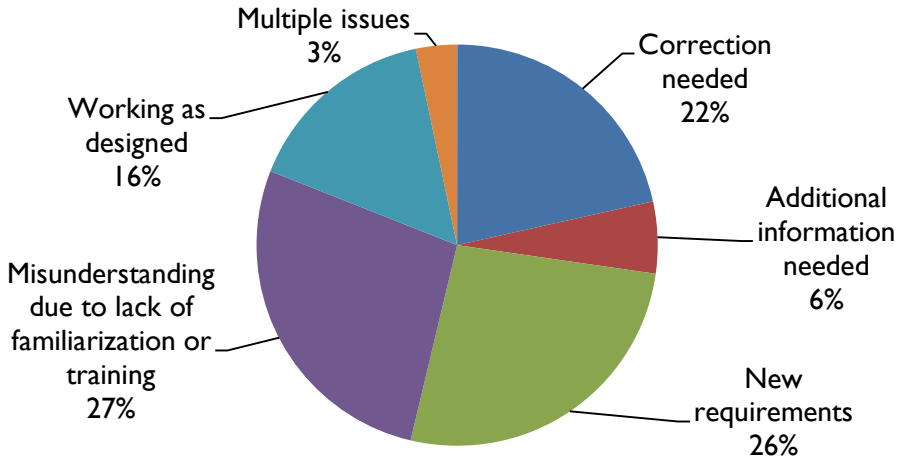
A. Issues Preventing Transition To USXPORTS Remain Unresolved

At the conclusion of its end-to-end testing of USXPORTS, BIS reported to DTSA 121 issues, and highlighted 6 key issues as its top priorities. DTSA expressed significant disagreement with the validity of BIS' issues, responding that only 1 of the 6 key issues still needed to be addressed—testing and implementation of a cross domain solution (CDS).[12] The remaining 5 issues, according to DTSA, required changes that were not part of the original agreement (or resulted from BIS network connectivity issues). In response to BIS' detailed list of 121 issues, DTSA categorized them as new requirements; BIS testers' lack of USXPORTS familiarity or training; or functionality working as designed.[13] In some instances, DTSA categorized them as "correction needed." For a small percentage of the issues DTSA either needed additional information from BIS concerning the issues or had assigned more than one category to the issues (see figure 3).

[12] A *cross domain solution* is an automated mechanism for transferring data between unclassified and classified systems in a manner that protects the integrity and confidentiality of the classified system.

[13] The concerns raised were contrary to the agreed-upon design of the system.

Figure 3. DTSA Responses to 121 USXPORTS Issues Identified by BIS Testing



Source: OIG analysis of DTSA responses to BIS

Issues remain unresolved as BIS chose to continue processing licenses in CUESS. It is important that problems encountered during testing be resolved promptly. However, BIS and DTSA have not resolved their disagreement over the issues identified during testing. We inquired with both BIS and DTSA regarding the current status of the issues and both agencies stated that no standing or recurring meetings had been scheduled to address them. In fact, during the 7 months (September 2014–April 2015) that followed the completion of end-to-end testing and preceded the signing of its latest amendment to the MOA, BIS and DTSA only met twice: for a November 2014 senior management meeting and in March 2015 to have a BIS user representative observe a demonstration of a small portion of updated USXPORTS functionality.

BIS stated that it did not conduct any additional follow-up with DTSA because DTSA's contract with its USXPORTS developer had ended, making USXPORTS developers unavailable for support until another contract could be signed. In addition, BIS officials stated that, rather than resolve the outstanding issues, they thought it more prudent to continue using CUESS for license processing and complete functionality referred to as "interagency referrals." This functionality enables BIS to provide its export license applications and data to other agencies for their review via USXPORTS.

Lack of sufficient follow-up makes the validity of outstanding issues unclear. As no additional testing or sufficient follow-up has occurred between the two groups to determine the validity of the issues, we conducted an independent assessment to determine the status of a sample of the issues identified from testing. To conduct our independent validation we selected 12 (10 percent) of the 121 issues for physical observation of the functionality in USXPORTS. We validated that 10 out of the sampled 12 issues (83 percent) had been resolved in USXPORTS. Based on our observations of the significant disagreement over the issues, we

conclude that neither BIS nor DTSA have a full understanding of the outstanding issues—including the level of effort, the party responsible for resolving them, or whether they are still significant enough to delay BIS' full transition to USXPORTS.

B. The Costs Versus Benefits of BIS Using a Separate Licensing System as Opposed to Full Transition to USXPORTS Are Uncertain

BIS' use of its own system to process licenses does not meet the ECR goal for a single electronic licensing system for the government. BIS began development of the CUESS LOA module in 2013 because of its concerns that USXPORTS project delays would delay its decommissioning of ECASS. BIS continued developing the module parallel with its USXPORTS transition efforts in 2014. After it determined that USXPORTS was not ready to support its internal license processing, BIS deployed the LOA module, began conducting license processing with it, and decommissioned ECASS. However, using the LOA module does not further the ECR initiative goal of having a single electronic licensing system for the government.

The costs versus the benefits of the Interagency Referral Sub-System, as opposed to full transition to USXPORTS, have not been determined. BIS entered into a sixth amendment to its original MOA with DTSA for the development and implementation of the USXPORTS Interagency Referral Sub-System. BIS estimated that the development and operations of the sub-system would cost $1.27 million, with an operational period of 5 months (October 2015–March 2016). The sub-system enables other agencies to use USXPORTS to view and process license applications and data BIS refers to them; it was also proposed to complete the CDS initially planned for USXPORTS and provide the interagency position on applications in both USXPORTS and CUESS for querying and case history. However, the CDS has not been implemented, as it still has not been approved by the Department of Defense. As a result, BIS license applications and data are not transferred in real time but manually, three times a day. BIS officials explained that they are still using the sub-system under an agreement that extended the period of performance from March 15, 2016, to May 15, 2016.

As BIS intends to continue use of the sub-system, it is unclear if it will continue its efforts to fully transition to USXPORTS as directed by the IPC. Moreover, it is unclear whether continuing with the LOA module and the sub-system is the best approach and BIS has not conducted a cost/benefit analysis on this decision. A cost/benefit analysis has been identified as a useful tool for the federal government to promote efficiency through well-informed decision-making.[14] This analysis would provide decision makers with the information needed to determine whether BIS' current approach will provide greater value to the government than the originally planned full transition to USXPORTS.

[14] U.S. Office of Management and Budget, Circular A-94 Revised, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*, October 29, 1992. Washington, DC: OMB, sections 1 and 5.

Recommendation

We recommend that the Undersecretary for Industry and Security ensure that

2. BIS conduct a cost/benefit analysis on using the LOA module with the Interagency Referral Sub-System versus fully transitioning to USXPORTS.

Summary of Agency Response and OIG Comments

In its response to our draft report, BIS concurred and noted actions it would take to address our recommendations. BIS' planned actions sufficiently address the recommendations and we look forward to its detailed action plan.

Appendix A: Objectives, Scope, and Methodology

We planned to perform this audit with two objectives: to determine whether BIS is (1) effectively and efficiently managing its transition to using USXPORTS for export licensing processing and (2) using effective and efficient software development practices for CUESS. Regarding our second objective (i.e., concerning CUESS software development), we decided to remove it from the scope of our audit because CUESS is currently in production, with no plan for major development work on the system. Our audit covered BIS' efforts to transition to USXPORTS and develop CUESS from October 2010 to August 2015. We conducted this audit from February 2015 to September 2015.

To conduct this audit, we

- interviewed management and staff at BIS, DTSA, the Department of State, OMB, and the NSC who were involved on the USXPORTS project or in export control reform efforts;
- reviewed program and project documentation and email communications; and
- observed the capabilities of the USXPORTS and CUESS.

We selected a judgmental sample of outstanding USXPORTS items with a status of *open*, *pending BIS feedback*, *pending BIS validation*, or *closed*. These items were judgmentally selected to assess whether the issues were still unresolved and to validate DTSA's claims that fixes had been implemented. As 83 percent of the 10 percent sample confirmed that the outstanding items had indeed been resolved, it was not necessary to increase the sample size to adjust for anomalies.

We reviewed BIS' activities and progress on the USXPORTS project against BIS' internal controls and industry best practices, including the following:

- Carnegie Mellon Software Engineering Institute's guidance, found in:
    - the Capability Maturity Model Integration for Acquisition, version 1.3, published November 2010, and
    - the Capability Maturity Model Integration for Development, version 1.3, published November 2010.
- MITRE Corporation's *Integrated Project Team Start-up Guide* (08-1645), published October 2008.

We conducted our audit under the authority of the Inspector General Act of 1978, as amended, and Department Organization Order 10-13, dated April 26, 2013. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence

that provides a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix B: BIS Cost History for USXPORTS Expansion Project

Agreement/ Amendments	Description	Project Costs
Original MOA	Established agreement for the USXPORTS Expansion Project and defined costs for Phase 1: requirements definition	$368,058
Amendment 1	Phase 2: Initial definition of costs for system design, module development, and testing	$915,025
Amendment 2	Phase 2: Additional funding for data migration challenges and extensive re-configuration of 15 years of data inconsistently archived	$214,050
Amendment 3	Phase 2: Additional funding for data migration challenges and extensive re-configuration of 15 years of data inconsistently archived	$77,635
Amendment 4	Phase 2: Additional funding for continued challenges due to project complexity	$811,045[a]
Amendment 5	Phase 2: Additional funding for continued challenges due to project complexity	$202,858[b]
	Total project costs	**$2,588,671**
	Planned costs at project outset	**$1,315,024[c]**
	Cost increase over planned project costs	**$1,273,647**

Source: OIG analysis of BIS information

[a] Actual costs for MOA 4 include $346,736.98 for payment of DTSA contractor services outside of the contract period.

[b] BIS only made partial payment on MOA 5 due to a dispute with DTSA over justification of costs for work performed; planned costs were $811.432.12.

[c] *Planned costs* include the agreed upon costs included in the original MOA and amendment 1, which initially defined the first two phases of the project—(1) requirements definition and (2) development and deployment.

Appendix C: Agency Response

UNITED STATES DEPARTMENT OF COMMERCE
Under Secretary for Industry and Security
Washington, D.C. 20230

JUN 14 2016

MEMORANDUM FOR Allen Crawley
Assistant Inspector General
for Systems Acquisition and IT Security
Office of the Inspector General

FROM: Eric L. Hirschhorn
Under Secretary for Industry and Security

SUBJECT: Comments on Draft Report "Full Transition to the Nation's Single Export Licensing System Is Uncertain"

Thank you for the opportunity to provide comments on your Draft Report "Full Transition to the Nation's Single Export Licensing System Is Uncertain," received June 2, 2016.

As you note, the Bureau of Industry and Security (BIS) has worked since 2010 and continues to work diligently to transition electronic processing of export license applications to the Department of Defense interagency export licensing system, U.S. Exports System (USXPORTS) as part of the President's August 2009 Export Control Reform (ECR) Initiative.

IG Recommendation 1: Ensure that BIS establishes an Integrated Project Team (IPT) for future systems development projects with other agencies (including DTSA), incorporating shared accountability.

BIS Response: BIS concurs with this recommendation. I have directed that BIS's Deputy Under Secretary and BIS's Chief Information Officer ensure that all future joint development efforts are led by a Federal Acquisition Council – Program/Project Management (FAC-P/PM) or Project Management Professional (PMP) certified staff member and that IPTs are formed in accordance with Project Management Institute and/or Software Engineering Institute industry best practices. Additionally, the BIS FAC-P/PM or PMP certified team leader will ensure incremental development processes are followed to include defined deliverables are met either on a quarterly or semi-annual basis.

Recommendation 2: Ensure that BIS conducts a cost/benefit analysis on using the Licensing Officer Access (LOA) module with the Interagency Referral Sub-System versus fully transitioning to USXPORTS.

BIS Response: I have directed that BIS's Deputy Under Secretary and BIS's Chief Information Officer, along with assistance from BIS's Chief Financial Officer and Director of Administration, conduct a cost/benefit analysis on using the LOA with the Interagency Referral Sub-System versus fully transitioning to USXPORTS, including estimates of developing a new system that meets the business requirements of all stakeholders versus the cost spent to develop and maintain the LOA module.

cc: Daniel O. Hill, Deputy Under Secretary, Bureau of Industry and Security
Carol Rose, Chief financial Officer and Director of Administration, BIS
Steve Cooper, Chief Information officer, DOC
Roger Clark, Senior Advisor, Office of Cyber Security, DOC

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