United States Government Accountability Office

GAO

Report to Congressional Committees

April 2007

INFORMATION TECHNOLOGY

Immigration and Customs Enforcement Needs to Fully Address Significant Infrastructure Modernization Program Management Weaknesses

GAO-07-565

April 2007

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Immigration and Customs Enforcement Needs to Fully Address Significant Infrastructure Modernization Program Management Weaknesses

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Highlights

Highlights of GAO-07-565, a report to congressional committees

Why GAO Did This Study

The Department of Homeland Security (DHS) fiscal year 2006 appropriations act provided $40.15 million for the Immigration and Customs Enforcement's (ICE) program to modernize its information technology (IT) infrastructure. As mandated by the appropriations act, the department is to develop and submit for approval an expenditure plan for the program, referred to as "Atlas," that satisfies certain legislative conditions, including a review by GAO. In performing its review of the Atlas plan, GAO (1) determined whether the plan satisfies certain legislative conditions and (2) provided other observations about the plan and management of the program. To do this, GAO analyzed the fiscal year 2006 Atlas expenditure plan and supporting documents against the legislative conditions, federal requirements, and related best practices. GAO also interviewed relevant DHS officials.

What GAO Recommends

GAO is recommending that DHS minimize Atlas program risks by fully adhering to requirements development and management practices, implementing key contract management and oversight practices, completing planned risk management activities, and implementing critical performance management practices. DHS concurred with GAO's recommendations and described actions planned and under way to implement them.

www.gao.gov/cgi-bin/getrpt?GAO-07-565.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Randolph C. Hite at (202) 512-3439 or hiter@gao.gov.

What GAO Found

The fiscal year 2006 Atlas expenditure plan, in combination with related program documentation and program officials' statements, satisfies or partially satisfies the legislative conditions set forth by Congress (see table).

DHS's Satisfaction of Legislative Conditions

Legislative conditions	Status
1. Expenditure plan must meet the capital planning and investment control review requirements established by the Office of Management and Budget (OMB).	partially satisfies
2. DHS must ensure Atlas is compliant with DHS's enterprise architecture.	partially satisfies
3. The plan must comply with the acquisition rules, requirements, guidelines, and systems acquisition management practices of the federal government.	partially satisfies
4. The plan must include a certification by DHS's chief information officer that an independent verification and validation agent is currently under contract for the project.	partially satisfies
5. The plan must be reviewed and approved by the DHS Investment Review Board, the Secretary of Homeland Security, and OMB.	satisfies

Source: GAO.

This satisfaction, however, is based on plans and commitments that provide for meeting these conditions rather than on completed actions to satisfy them. For example, to address the legislative condition related to capital planning and investment control review requirements, the program plans to, among other things, update its cost-benefit analysis in September 2007 to reflect emerging requirements and other program changes and to complete a privacy impact assessment by April 2007. In addition, the program is in the process of defining how it plans to use its independent verification and validation agent.

GAO also observed that DHS has not implemented key system management practices. Specifically,

- rigorous practices are not being fully adhered to in developing and managing system requirements,
- key contract management and oversight controls have not been fully implemented,
- planned risk management practices have yet to be implemented, and
- performance management practices that are critical to measuring progress against program goals are still being implemented.

Thus, much still needs to be accomplished to minimize the risks associated with the program's capacity to deliver promised IT infrastructure capabilities and benefits on time and within budget. Given that hundreds of millions of dollars are to be invested and the program is critical to supporting the ICE mission, it is essential that DHS follow through on its commitments to build the capability to effectively manage the program. Proceeding without it introduces unnecessary risks to the program and potentially jeopardizes its viability for future investment.

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Abbreviations

CCE	Common Computing Environment
CIO	chief information officer
CMMI	Capability Maturity Model Integrated
COTR	contracting officer's technical representative
DHS	Department of Homeland Security
EA	enterprise architecture
ICE	Immigration and Customs Enforcement
IT	information technology
IV&V	independent verification and validation
OMB	Office of Management and Budget
SACMM	Software Acquisition Capability Maturity Model
SEI	Software Engineering Institute

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United States Government Accountability Office
Washington, D.C. 20548

April 27, 2007

The Honorable Robert C. Byrd
Chairman
The Honorable Thad Cochran
Ranking Member
Subcommittee on Homeland Security
Committee on Appropriations
United States Senate

The Honorable David E. Price
Chairman
The Honorable Harold Rogers
Ranking Member
Subcommittee on Homeland Security
Committee on Appropriations
House of Representatives

The 2006 Department of Homeland Security (DHS) appropriations act[1] provided $40.15 million for Immigration and Customs Enforcement's (ICE) program to modernize its information technology (IT) infrastructure. The goals of the program—which consists of seven related IT projects and is referred to by ICE as the "Atlas" program—include improving information sharing and collaboration, strengthening information security, and improving workforce productivity. The act provides that none of the funds may be obligated until the department develops a plan for how the funds are to be spent that satisfies certain legislative conditions. The conditions included, among other things, having GAO review the plan. On November 9, 2006, DHS submitted its fiscal year 2006 expenditure plan to the Senate and House Appropriations Subcommittees on Homeland Security. Pursuant to the act, we reviewed the plan. Our objectives were to (1) determine whether the plan satisfies legislative conditions specified in the act and (2) provide other observations about the expenditure plan and the department's management of the Atlas program.

On February 2, 2007, we provided our review results via a briefing to the staffs of the Senate and House Appropriations Subcommittees on Homeland Security. This report summarizes our findings, conclusions, and

[1]Pub. L. No. 109-90, Oct. 18, 2005.

recommendations from that briefing. The full briefing, including our scope and methodology, is reprinted in appendix I.

Compliance with Legislative Conditions

DHS's fiscal year 2006 Atlas expenditure plan, including related program documentation and program officials' stated commitments, satisfies or partially satisfies key aspects of (1) meeting the capital planning and investment control review requirements of the Office of Management and Budget (OMB);[2] (2) complying with the DHS enterprise architecture;[3] (3) complying with acquisition rules, requirements, guidelines, and systems acquisition management practices of the federal government; (4) including certification by the department's chief information officer (CIO) that an independent verification and validation agent is currently under contract for the project; and (5) having the plan reviewed and approved by the department's Investment Review Board, the Secretary of Homeland Security, and OMB.

Regarding the fourth legislative condition, the department certified that an independent verification and validation agent is under contract for Atlas, and the department is in the process of defining how it plans to use its agent, but unresolved issues remain. For example, we have previously reported[4] that the independence of a verification and validation agent is critical to providing management with objective insight into program processes and associated work products. We also reported[5] that to be effective, the verification and validation function should be performed by an entity that is independent of the processes and products that are being reviewed. When the agent engaged to provide the service is a contractor, a practice to help ensure independence is to include in the agent's contract a provision that prohibits the agent from soliciting, proposing, or being

[2]OMB Circular A-11, part 7, establishes policy for planning, budgeting, acquiring, and managing federal capital assets.

[3]An enterprise architecture provides a clear and comprehensive picture of an organization's operations and its supporting systems and infrastructure. It is an essential tool for effectively engineering business processes and for implementing and evolving supporting systems in a manner that maximizes interoperability, minimizes overlap and duplication, and optimizes performance.

[4]GAO, *Homeland Security: Recommendations to Improve Management of Key Border Security Program Need to Be Implemented*, GAO-06-296 (Washington, D.C.: Feb. 14, 2006).

[5]GAO-06-296.

awarded program work other than the independent verification and validation services and products. However, the contract that Atlas awarded to its agent did not include such a provision.

Observations on the Expenditure Plan and Management of Atlas

Our observations address program efforts regarding (1) requirements development and management, (2) contract management and oversight, (3) risk management, and (4) performance management. An overview of these observations follows:

- *Rigorous practices are not being fully adhered to in developing and managing system requirements.* On its three key projects,[6] the program has not fully implemented federal IT guidance, relevant best practices, and agency policies and procedures (i.e., *ICE System Lifecycle Management Handbook)* that provide for effective requirements development and management activities. For example, on its Common Computing Environment project, while the project established a policy to guide project efforts in developing and managing requirements, it did not among other things:
  - document stakeholder comments as part of the requirements elicitation process and review and obtain stakeholder approval on requirements until approximately 1 year after deploying system capabilities;
  - follow a disciplined change management process for several years (between 2003 and 2006) after the project was initiated in March 2003 (during this time, requirements were introduced and implemented in an ad hoc fashion); and
  - develop supporting analysis showing traceability among requirements, systems design, and the contract.
- *Key contract management and oversight practices are not fully implemented.* The program has not fully implemented practices that (1) the Software Engineering Institute's CMMI®[7] has identified as

[6]These three key projects are Common Computing Environment, Integration, and ICE Mission Information.

[7]CMMI is registered in the U.S. Patent and Trademark Office by Carnegie Mellon University.

essential to effectively managing and overseeing contracts that support IT projects and (2) the program has largely established in its existing policies and procedures. Specifically, the program has implemented two key practices, but has not fully implemented four others. For example, the program has assigned responsibility and authority for performing contract management and oversight, and has trained staff performing contract management and oversight. However, it has not, among other things, fully documented each contract—including clearly identifying the work to be performed and acceptance criteria—and verified and accepted deliverables.

- *Key risk management practices have yet to be implemented.* We previously reported[8] that the program had developed a risk management plan and process to guide program office staff in managing risks throughout each project's life cycle and had recently begun to implement the risk management process. Since then, the program has taken additional steps to implement risk management, such as hiring a risk management coordinator and conducting quarterly program management meetings to review the program's progress in managing risks. However, the program has not fully implemented key practices essential to effectively managing project risks. For example, it does not have a transparent, documented, and traceable process for inventorying and resolving risks. Further, while the risk management plan defines a process and associated practices for developing risk mitigation strategies, the program has not fully implemented them. In addition, although the risk management plan calls for developing a process for elevating risks to management's attention, the program has not developed and implemented such a process.

- *Performance management practices are still being implemented and available data show mixed results and may not be reliable.* We reported[9] in July 2006 that Atlas had begun taking steps to implement performance goals and measures. Since then, the program has taken additional steps to define and implement them. For example, the program identified 13 goals—for 5 of its 7 projects—that it has been using to measure progress during fiscal year 2006. However, it has yet to

[8]GAO, *Information Technology: Immigration and Customs Enforcement Is Beginning to Address Infrastructure Modernization Program Weaknesses but Key Improvements Still Needed*, GAO-06-823 (Washington, D.C.: July 27, 2006).

[9]GAO-06-823.

fully implement and institutionalize its performance goals and measures. For example, the program has not yet developed performance goals for 2 projects.

In addition, progress against performance goals, as reported by the program, show mixed results. For example, of the 12 goals, the program has met 3 of them. Further, underlying data used by the program to measure performance may not be reliable in all cases. For example, on 1 goal, the program uses project cost and schedule data from the 2005 Atlas business case in measuring progress against the goal, even though these data are out of date (e.g., they do not reflect project cost and schedule slippages that have occurred since 2005).

Conclusions

The fiscal year 2006 Atlas expenditure plan, in combination with related program documentation and program officials' statements, satisfies or partially satisfies the legislative conditions set forth by Congress. However, this satisfaction is based on plans and commitments that provide for meeting these conditions, rather than on completed actions to satisfy the conditions. In addition, while steps are being initiated that are intended to address significant program management weaknesses, a number of improvements, including those recommended in our past reports, have yet to be implemented.

Further, the program has not fully achieved many performance goals that it set out to accomplish over the past year. The above factors continue to put the program at risk and call for heightened and sustained management attention to expeditiously address and resolve the issues. Thus, there is much that still needs to be accomplished to minimize the risks associated with the program's capacity to deliver promised IT infrastructure capabilities and benefits on time and within budget. This includes demonstrating better progress against established performance goals in the coming year.

Given that hundreds of millions of dollars are to be invested and the program is critical to supporting the ICE mission, it is essential that DHS follow through on its commitments to build the capacity to effectively manage the program. Proceeding without this capacity introduces unnecessary risks to the program and potentially jeopardizes its viability for future investment.

Recommendations for Executive Action

To minimize risks to the Atlas program, we recommend that the Secretary of Homeland Security direct the Assistant Secretary for Immigration and Customs Enforcement to ensure that ICE follows through on its commitments to implement effective management controls and capabilities by implementing the following five recommendations:

- Employ practices essential to ensuring that the Atlas program's independent verification and validation agent is and remains independent, including incorporating requirements in future contracting actions, such as the renegotiation or recompetition of the current independent verification and validation contract, which will prohibit the agent from soliciting, proposing, or being awarded program work other than providing independent verification and validation services and products.

- Fully adhere to requirements development and management practices, including those specified in ICE's policies and procedures. This should also include having the Atlas program manager develop a process improvement plan for all of the projects that is consistent with the *ICE System Lifecycle Management Handbook* and provide for making the program manager and project managers responsible and accountable for rigorously adhering to the requirements in the handbook.

- Fully implement key contract management and oversight practices, including those specified in ICE's policies and procedures. This should also include ensuring that the Atlas program manager, working with the program's contracting officer's technical representative, follow through on planned efforts to strengthen the program's compliance with these practices by (1) revising the acquisition plan by May 2007; (2) revising the *ICE System Lifecycle Management Handbook* by June 2007 to incorporate key contract management activities such as contract tracking and oversight; and (3) preparing statements of work (beginning in February 2007) for future contracts to clearly define Atlas work statements and acceptance criteria.

- Complete implementation of planned risk management activities. This should include (1) updating the risk inventory to include risks for all projects and risk areas and (2) fully implementing and institutionalizing procedures for reporting to management on the existence and status of risks and progress in implementing mitigation strategies.

- Improve program performance management, including developing performance goals for projects that do not have goals and reporting on their progress in the fiscal year 2007 expenditure plan. Further, the program should assess that the data being used to measure progress are reliable, complete, and accurate.

Agency Comments and Our Evaluation

In DHS's written comments on a draft of this report, signed by the Director, Departmental GAO/Office of Inspector General Liaison Office, the department concurred with all of our recommendations and described actions planned and under way to implement them. The department also orally provided technical comments updating Atlas obligation amounts and the milestone for revising the acquisition plan. We incorporated these comments in the report and briefing as appropriate. DHS's written comments are reprinted in appendix II.

We are sending copies of this report to the Chairman and Ranking Members of other Senate and House committees and subcommittees that have authorization and oversight responsibilities for homeland security. We are also sending copies to the Secretary of Homeland Security, the Assistant Secretary for Immigration and Customs Enforcement, and the Director of the Office of Management and Budget. Copies of this report will also be available at no charge on our Web site at www.gao.gov.

Should you or your offices have any questions on matters discussed in this report, please contact me at (202) 512-3439 or at hiter@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix III.

Randolph C. Hite
Director, Information Technology Architecture
and Systems Issues

Briefing to the Staffs of the Subcommittees on Homeland Security, Senate and House Committees on Appropriations

Information Technology: Immigration and Customs Enforcement Needs to Fully Address Significant Infrastructure Modernization Program Management Weaknesses

Briefing to the staffs of the

Subcommittees on Homeland Security
Senate and House Committees on Appropriations

February 2, 2007

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Outline of Briefing

Introduction

Objectives, Scope, and Methodology

Results in Brief

Background

Results

- Legislative Conditions
- Observations

Conclusions

Recommendations for Executive Action

Agency Comments

Attachment I: Detailed Scope and Methodology

Attachment II: GAO Analysis of Requirements Management

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Introduction

The Department of Homeland Security's (DHS) Bureau of Immigration and Customs Enforcement (ICE)[1] is responsible for enforcing immigration, border security, trade, and other laws by, among other means, investigating and collecting intelligence on individuals and groups that act to violate these laws. ICE is also responsible for protecting federal facilities.

Atlas is the ICE program developed to modernize the bureau's information technology (IT) infrastructure, which includes the hardware (e.g., servers, routers, storage devices, communication lines) and system software (e.g., database management and operating systems and network management) that provide an environment for operating and maintaining software applications.

According to ICE, the goals of the Atlas program include improving information sharing, strengthening information security, and improving workforce productivity.

The fiscal year 2006 Department of Homeland Security Appropriations Act[2] appropriated $40.15 million for Atlas[3] and stated that none of the funds may be obligated until the department submits for approval to the Senate and House Committees on Appropriations a plan for how the funds are to be spent that satisfies the following legislative conditions:

[1]ICE was formed from the former Immigration and Naturalization Service, U.S. Customs Service, and other entities. Atlas began in 2002 under the former Immigration and Naturalization Service.
[2]Pub. L. No. 109-90, Oct. 18, 2005.
[3]In the act, appropriations for Atlas are under the heading Automation Modernization for Immigration and Customs Enforcement.

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Introduction

- meets the capital planning and investment control review requirements established by the Office of Management and Budget (OMB), including OMB Circular A-11, part 7;[4]
- complies with DHS's information systems enterprise architecture;
- complies with the acquisition rules, requirements, guidelines, and systems acquisition management practices of the federal government;
- includes certification by the DHS chief information officer (CIO) that an independent verification and validation agent is currently under contract for the project;
- is reviewed and approved by DHS's Investment Review Board,[5] the Secretary of Homeland Security, and OMB; and
- is reviewed by GAO.

DHS submitted its fiscal year 2006 expenditure plan for $39.75[6] million on November 9, 2006, to the Senate and House Appropriations Subcommittees on Homeland Security.

[4]OMB Circular A-11 establishes policy for planning, budgeting, acquisition, and management of federal capital assets.
[5]The purpose of the Investment Review Board is to integrate capital planning and investment control, budgeting, and acquisition. It is also to ensure that spending on investments directly supports and furthers the mission and that this spending provides optimal benefits and capabilities to stakeholders and customers.
[6]DHS's fiscal year 2006 appropriations (Pub. L. No. 109-90, Oct. 18, 2005) provided $40.15 million for Atlas. In December 2005, this amount was reduced to $39.75 million via a 1 percent governmentwide rescission in Pub. L. No. 109-148, Division B, Dec. 30, 2005.

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Objectives, Scope, and Methodology

As agreed, our objectives were to

- determine whether the Atlas fiscal year 2006 expenditure plan satisfies the legislative conditions and
- provide other observations about the expenditure plan and DHS's management of the Atlas program.

To address our first objective, we analyzed the fiscal year 2006 Atlas expenditure plan and supporting documents against legislative conditions and relevant federal requirements and related best practices to determine whether the conditions were being met.

To address our second objective, we evaluated supporting documentation and interviewed relevant officials to determine progress in establishing program management capabilities in areas such as requirements development and management, contract management and oversight, risk management, and performance management. In assessing requirements management and contract management and oversight, we focused on three projects—Common Computing Environment, Integration, and ICE Mission Information—that collectively account for approximately 75 percent of the funds provided to the program and that the Atlas program manager identified as being the most critical to the program's success and ICE's mission. We conducted our work at DHS and ICE headquarters in Washington, D.C., from July 2006 through January 2007 in accordance with generally accepted government auditing standards. Details of our scope and methodology are provided in attachment 1.

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Results in Brief

Objective 1: Satisfaction of Legislative Conditions

Legislative conditions	Status
1. Meets the capital planning and investment control review requirements established by OMB, including OMB Circular A-11, part 7.	partially satisfies[7]
2. Complies with the DHS information systems enterprise architecture.	partially satisfies
3. Complies with the acquisition rules, requirements, guidelines, and systems acquisition management practices of the federal government.	partially satisfies
4. Includes a certification by the chief information officer of the Department of Homeland Security that an independent verification and validation agent is currently under contract for the project.	partially satisfies
5. Is reviewed and approved by the DHS Investment Review Board, Secretary of Homeland Security, and OMB.	satisfies[8]
6. Is reviewed by GAO.	satisfies

Source: GAO.

[7]Partially satisfies=the plan, in combination with supporting documentation and stated commitments by program officials, either satisfies or provides for satisfying many, but not all, key aspects of the condition that we reviewed.
[8]Satisfies=the plan, in combination with supporting documentation and stated commitments by program officials, either satisfies or provides for satisfying every aspect of the condition that we reviewed.

Results in Brief

Objective 2: Other Observations

DHS has not implemented key system management practices essential to establishing an effective program management control environment. Specifically, in managing the Atlas program, the department has not

- fully adhered to rigorous practices called for in developing and managing system requirements,
- implemented key contract management and oversight controls,
- completed implementation of planned risk management practices, or
- implemented performance management practices critical to measuring progress against program goals.

These shortfalls are attributable in part to a number of factors, including the Atlas program's expedited schedule to deploy modernized IT infrastructure capabilities to users in the wake of the events of September 11, 2001, and in the haste of doing so, not following these practices or related ICE policies and procedures. Until these practices are fully implemented, the program is at an increased risk of not being able to deliver modern IT infrastructure capabilities on time and within budget. Program officials acknowledge the shortfalls and have efforts planned or under way to address some, but not all, of the missing practices.

Accordingly, we are making recommendations to the Secretary of Homeland Security to strengthen the Atlas program by implementing and institutionalizing these key system management practices, thereby helping to establish an effective program management control environment. In commenting on a draft of this briefing, ICE officials, including the deputy chief information officer who is also the Atlas program manager, agreed with our results.

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Background
ICE

ICE was formed as a component agency of DHS in 2003 when the law enforcement functions of the Department of Justice's former Immigration and Naturalization Service and Department of the Treasury's former Customs Service and other agencies were merged into DHS.

The ICE mission is to ensure the security of the American people and homeland by, among other means, investigating violators of and enforcing the nation's immigration and customs laws; policing and securing federal buildings and other facilities; and collecting, analyzing, and disseminating intelligence to assist in these endeavors. Headed by the Assistant Secretary of Immigration and Customs Enforcement, ICE has approximately 15,000 employees in more than 400 offices in the United States and in other countries.

The Atlas program was started by the Immigration and Naturalization Service in 2002. Responsibility for the program was transferred to ICE in 2003. The figure on the following slide is a simplified version of the current ICE and Atlas organizational placements within DHS.

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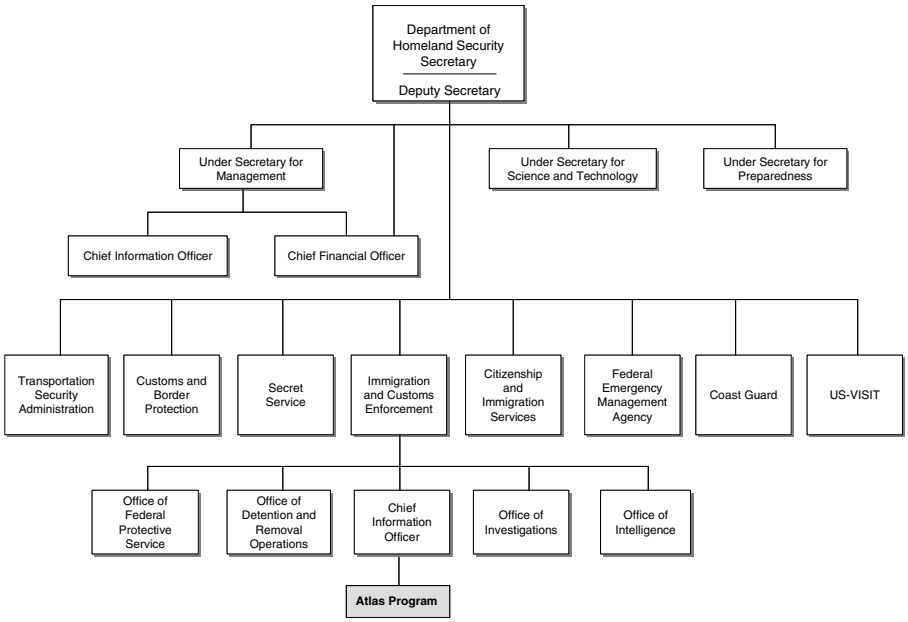
Background
ICE and Atlas Organizational Placement



Source: GAO analysis of DHS data.

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Background
Program Impetus and Goals

Impetus for Program

According to ICE officials, Atlas was initiated to address information sharing and security limitations within the former Immigration and Naturalization Service caused by, for example,

- obsolete hardware/software;
- incompatible, noninteroperable information systems; and
- system security weaknesses.

These officials stated that these challenges were exacerbated by the formation of ICE because the organizations merged into ICE had different hardware/software environments (e.g., multiple e-mail systems) and different missions and customer needs.

Program Goals

The stated goals of Atlas are, among other things, to

- promote information sharing and collaboration,
- strengthen information security, and
- enhance workforce productivity.

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Background
Atlas Projects

Atlas Consists of Seven Projects

Project	Description
Common Computing Environment	▪ Deploy compatible desktops, servers, and standard office automation applications. ▪ Deploy a common e-mail platform. ▪ Integrate ICE with a shared departmental active directory structure.
Integration	▪ Migrate from the ICE network to the DHS OneNetwork infrastructure. ▪ Provide streaming video. ▪ Refresh local area network cabling and electronics and replace legacy firewalls. ▪ Refresh the wide area network and local area network communications hardware at the overseas ICE attaché offices. ▪ Provide network support for all applications and provide converged communications among all system users.
ICE Mission Information	▪ Provide enterprise data warehousing capabilities and integrate related ICE business processes. ▪ Organize information and support user access so ICE users can find relevant, timely, and reliable information. ▪ Improve information searching and indexing capabilities and integrate legacy applications with service-oriented techniques.
Information Assurance	▪ Institute strong information, system/application platform, network, and computer security measures.
Architecture Engineering	▪ Provide state-of-the-art engineering facilities and tools to ensure new technologies align to the DHS enterprise architecture (EA).
Data Center Migration	▪ Migrate ICE hardware and applications from the Department of Justice data centers to the common DHS data center. ▪ Ensure compliance with the DHS EA.
Transformation Planning	▪ Oversee and coordinate the various Atlas projects. ▪ Ensure compliance with the DHS EA. ▪ Ensure adherence to project cost, schedule, and performance goals.

Source: GAO analysis of DHS data.

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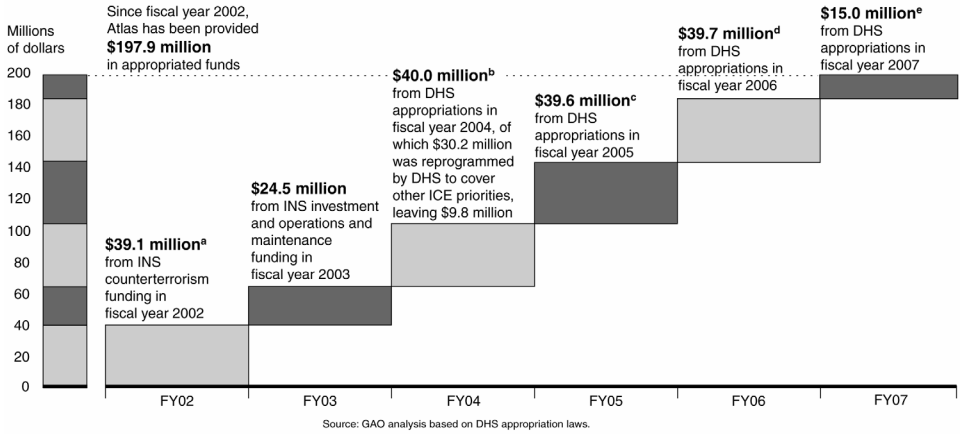
Background
Atlas Appropriations

Appropriated Funds



Source: GAO analysis based on DHS appropriation laws.

[a]Counterterrorism funding came from Pub. L. No. 107-117, Jan. 10, 2002; H.R. Rep. 107-350, Dec. 19, 2001.
[b]Pub. L. No. 108-90, Oct. 1, 2003.
[c]Pub. L. No. 108-334, Oct. 18, 2004.
[d]DHS's fiscal year 2006 appropriations (Pub. L. No. 109-90, Oct. 18, 2005) provided $40.15 million for Atlas. In December 2005, this amount was reduced to $39.7 million via a 1 percent governmentwide rescission in Pub. L. No. 109-148, Division B, Dec. 30, 2005.
[e]Pub. L. No. 109-295, Oct. 4, 2006. The law mandates that DHS also submit an expenditure plan prior to obligation of these funds.

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Background
Atlas Obligations

ICE reports that it has obligated $84.7 million of the $113.0 million available for Atlas in fiscal years 2002, 2003, 2004, and 2005.

Atlas funds obligated (by project) for fiscal years 2002-2005 (as of December 31, 2006)

Project (in order presented in the plan)	Obligations (in millions)				Total
	FY 2002	FY 2003	FY 2004	FY 2005	
Common Computing Environment	$0	$10.5	$3.2	$4.3	$18.0
Integration	6.1	20.4	2.5	0.5	29.5
ICE Mission Information	1.3	4.6	0.8	4.0	10.7
Information Assurance	10.2	9.6	0	0.6	20.4
Architecture Engineering	0	0	0	0.7	0.7
Data Center Migration	0	0	0	0	0
Transformation Planning	0	0.9	3.3	1.2	5.4
TOTAL	**$17.6**	**$46.0**	**$9.8**	**$11.3**	**$84.7**

Source: GAO analysis of DHS data.

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Background
Planned Use of Fiscal Year 2006 Funding

According to the fiscal year 2006 expenditure plan, the $39.75 million is to be spent on the projects as follows.

Distribution of funding for Atlas projects (in order presented in the plan)

Project	Funding (in millions)	Planned use
Common Computing Environment	$23.88	▪ Complete acquisition of hardware refresh ▪ Deploy active directory and e-mail exchange system
Integration	2.30	▪ Replace outdated communications electronics at foreign attachés to ensure compatibility with current ICE Net WAN and LAN infrastructure standards ▪ Complete acquisition of streaming video for field sites
ICE Mission Information	5.84	▪ Complete acquisition of technology to efficiently integrate all related ICE business processes ▪ Complete 60 percent of acquisition of technology to support data warehousing capabilities
Information Assurance	0.92	▪ Acquire IT security specialists to design and develop single sign-on and audit log capabilities
Architecture Engineering	0	▪ No use of fiscal year 2006 funds identified
Data Center Migration	0.89	▪ Plan for the migration of ICE hardware and applications from two Department of Justice data centers to a common DHS data center
Transformation Planning	5.92	▪ Provide $2.3 million to continue performing and planning program management activities, including maintaining the Atlas business case ▪ Provide $3.6 million in management reserve for unanticipated program costs or to fund priority emerging IT modernization requirements
TOTAL	**$39.75**	

Source: GAO analysis of DHS data.

Objective 1 Results
Legislative Conditions

The Atlas expenditure plan satisfies or partially satisfies each of the legislative conditions.

Condition 1 partially satisfied. The expenditure plan, including related program documentation and statements from the program manager, partially satisfies the capital planning and investment control review requirements established by OMB, including Circular A-11, part 7, which establishes policy for planning, budgeting, acquisition, and management of federal capital assets.

Examples of our analysis are included in the following table. As the table shows, not all OMB requirements have been satisfied, but oral commitments have been made for doing so. Given that ICE has reportedly already invested $75.4 million on Atlas projects and plans to invest another $39.7 million this year, it is important for ICE to follow through on these commitments.

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Objective 1 Results
Legislative Conditions

GAO Analysis of Atlas Compliance with Legislative Conditions

Examples of OMB Circular A-11 requirements	Results of our analysis
Indicate whether the investment was approved by an investment review committee	The plan was approved on May 11, 2006, by DHS's Deputy Secretary, who chairs the DHS Investment Review Board.
Provide justification and describe acquisition strategy	A business case, including a cost-benefit analysis, was issued in December 2005 to provide economic justification for the program. It estimated the program's life cycle costs to be approximately $1 billion through the year 2024. The program plans to issue an updated cost-benefit analysis in September 2007 to reflect emerging requirements and other program changes (e.g., cost and schedule slippages). In addition, the expenditure plan and supporting documents (e.g., fiscal year 2006 Atlas budget submission to OMB known as an exhibit 300) provide aspects of a high-level acquisition strategy, such as identifying the ICE contracts that are being used and are to be used to acquire hardware and software products and program support services. An acquisition plan was approved in February 2006 that includes a statement of need and the capabilities to be delivered through these contracts. To help ensure compliance with contract criteria and Atlas program objectives, a contracting officer's technical representative (COTR) was hired in November 2006. The program's efforts to ensure compliance with contract management and oversight practices are more fully discussed in the Observations section of this briefing.
Summarize life cycle costs and cost-benefit analysis, including the return on investment	The December 2005 cost-benefit analysis provides costs and benefits for the life cycle of Atlas, which is through the year 2024. The analysis also included an estimated return on investment for three alternative approaches. As we previously reported,[9] the analysis was in large part consistent with OMB and best practices guidance, but it did omit key practices such as key mission requirements. According to the program manager, the analysis is considered to be a "living document" and the program plans to issue an update in September 2007 that, among other things, addresses these requirements.

[9]GAO, *Information Technology: Immigration and Customs Enforcement Is Beginning to Address Infrastructure Modernization Program Weaknesses but Key Improvements Still Needed,* GAO-06-823 (Washington, D.C.: July 27, 2006).

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GAO Analysis of Atlas Compliance with Legislative Conditions (cont.)	
Examples of OMB Circular A-11 requirements	**Results of our analysis**
Provide performance goals and measures	The expenditure plan and supporting documentation (e.g., prior expenditure plans) identify 13 proposed goals and measures, but two projects do not have measures. Proposed measures have been drafted for these projects, but target dates for their completion have not been identified by the program. In addition, as part of the December 2005 Atlas business case, the program mapped Atlas's goals to ICE's mission and goals. Our analysis of Atlas's performance management is discussed in more detail in the Observations section of this briefing.
Address security and privacy	The plan and supporting documentation state the importance of security and privacy and provide high-level information on intended security measures, including one proposed project—information assurance—that is intended to implement an ICE security program. The plan allocates $0.9 million to this project in addition to the $1.9 million provided in the fiscal year 2005 plan. In addition, the program issued an Atlas system security plan, as well as a security test and evaluation plan, in April 2006. The program also recently issued an updated system security plan and security test and evaluation plan in December 2006. ICE also developed a draft Atlas privacy impact assessment in August 2005, submitted a revised assessment in August 2006 to the DHS privacy office, and plans to complete and submit the final Atlas privacy impact assessment by April 2007.
Provide for managing risk	The program issued a risk management plan in January 2006. This plan provides guidance for identifying, analyzing, and resolving program risks before they occur. In addition, a risk management coordinator was hired in August 2006 to help identify and monitor risks. According to the program manager, this official recently vacated the position, and the program is currently in the process of hiring a new coordinator. (At our Feb. 1, 2007, exit meeting with DHS and ICE officials, the program manager told us a coordinator had been hired on Jan. 22, 2007.) Further, while the program procured an automated tool in May 2006 to help complete the inventory and manage risks, it does not have, among other things, a complete inventory of all program risks. Our complete findings related to risk management are addressed in the Observations section of this briefing.

Source: GAO analysis of DHS data.

Objective 1 Results
Legislative Conditions

Condition 2 partially satisfied. The plan, including related program documentation and DHS officials' statements, partially satisfies the condition that the department ensures Atlas is compliant with DHS's enterprise architecture (EA).

An EA provides a clear and comprehensive picture of an organization's operations and its supporting systems and infrastructure. It is an essential tool for effectively and efficiently engineering business processes and for implementing and evolving supporting systems in a manner that maximizes interoperability, minimizes overlap and duplication, and optimizes performance. We have worked with Congress, OMB, and the federal Chief Information Officers Council to highlight the importance of architectures for both organizational transformation and IT management. An important element of EA management is ensuring that IT investments are compliant with the EA, including basing such assessments on documented analysis.

The DHS Enterprise Architecture Board, supported by the Enterprise Architecture Center of Excellence,[10] is responsible for ensuring that projects demonstrate adequate technical and strategic compliance with the department's EA. To this end, the board conducts compliance reviews at key decision points in an investment's life cycle. Specifically, DHS guidance[11] directs the board prior to an investment's acquisition milestone (referred to by DHS as key decision point 2) to assess the investment against the transition strategy, data architecture, application component, and technology architecture.

[10]A review group made up of subject matter experts that recommends EA compliance to the DHS Enterprise Architecture Board and ultimately to the DHS Investment Review Board.
[11]Department of Homeland Security Enterprise Architecture Board: *EAB Governance Process Guide*, August 9, 2004, draft version 2.0.

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We previously reported[12] in May 2005 that the Atlas program manager requested that the center assess the program's compliance with the EA. The center staff compared Atlas to version 2.0 of the DHS EA and reported the results of its assessment to the board, stating that Atlas was in compliance with the DHS EA. In July 2005, the board approved this compliance determination.

Subsequently, we reported[13] that ICE's compliance determination was not based on a documented analysis mapping Atlas's infrastructure to the DHS EA. Specifically, the department did not have a documented methodology for evaluating programs for compliance with the DHS EA, other than relying on the expertise of the Center of Excellence members.

Since the July 2005 compliance determination, DHS issued version 2006 of its EA.[14] In addition, Atlas has undertaken an effort to define an architecture framework and technical environment for a data warehouse aimed at providing reporting and analytical capabilities to investigative and enforcement personnel. Despite these changes, no new compliance reviews have been conducted. According to the Atlas program manager, a compliance review was not required during this time as the program had not yet reached a phase requiring it. The program manager stated the department has scheduled an EA compliance review in March 2007.

[12]GAO-06-823.
[13]GAO-06-823.
[14]On August 14, 2006, we reported that version 2006 of DHS's EA was at stage 2 of the Enterprise Architecture Management Maturity Framework, demonstrating that DHS has established the foundational commitments and capabilities needed to manage the development of the architecture. See GAO, *Enterprise Architecture: Leadership Remains Key to Establishing and Leveraging Architectures for Organizational Transformation*, GAO-06-831 (Washington, D.C.: Aug. 14, 2006).

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In addition, program officials told us that they are taking other steps aimed at ensuring compliance. These steps include

- participating in the DHS Enterprise Architecture Center of Excellence and the Data Management Working Group; these groups are currently tasked with developing the DHS EA and the DHS Data Reference Model,
- participating in DHS EA initiatives, such as serving on the Service Oriented Architecture Tactical Working Group,[15] which is to provide the framework for departmentwide service alignment and interoperability efforts, and
- establishing an Atlas Interoperability Lab—under the Architecture Engineering project—to among other things, help ensure the program's projects are compliant with the EA.

These steps notwithstanding, until DHS demonstrates, through verifiable documentation and a methodologically based analysis, that ICE is aligned with the DHS enterprise architecture, the program will remain at risk of being defined and implemented in a way that does not support optimal departmentwide operations, performance, and achievement of strategic goals and outcomes.

[15]The Tactical Working Group is responsible for developing strategies to address service oriented architecture design and operational issues.

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Condition 3 partially satisfied. The plan, including related program documentation and statements from the Atlas program manager, partially satisfies the condition to comply with the acquisition rules, requirements, guidelines, and systems acquisition management practices of the federal government. These practices provide a management framework based on the use of rigorous and disciplined processes for planning, managing, and controlling the acquisition of IT resources, including:

- acquisition planning, which ensures, among other things, that reasonable plans, milestones, and schedules are developed and that all aspects of the acquisition effort are included in these plans;
- procurement, which involves making sure that (1) a request for proposals delineating a project's requirements is prepared and (2) consistent with relevant acquisition laws and regulations, a contractor is selected that can cost-effectively satisfy these requirements;
- requirements development and management, which includes establishing and maintaining a common and unambiguous definition of requirements among the acquisition team, the system users, and the development contractor;
- project management, which provides for management of the activities within the project office and supporting contractors to ensure a timely, efficient, and cost-effective acquisition;
- contract tracking and oversight, which ensures that the development contractor performs according to the terms of the contract; needed contract changes are identified, negotiated, and incorporated into the contract; and contractor performance issues are identified early, when they are easier to address; and

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- evaluation, which determines whether the acquired products and services satisfy contract requirements before acceptance.

These acquisition management processes are also embodied in published best practices models, such as the Software Engineering Institute's Software Acquisition Capability Maturity Model®.[16]

Examples of our analysis of ICE performance of these processes and practices are shown in the following table. They show that not all aspects of the processes and practices have been implemented, but that oral commitments have been made for doing so.

[16]Developed by Carnegie Mellon Software Engineering Institute (SEI), *Software Acquisition Capability Maturity Model* (SA-CMM®) version 1.03 (March 2002).

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GAO Analysis of Atlas Compliance with Legislative Conditions

Example of practices	Results of our analysis
Acquisition Planning Ensures that reasonable plans, milestones, and schedules are developed and that all aspects of the acquisition effort are included in these plans.	The expenditure plan and supporting documents (e.g., fiscal year 2006 Atlas budget submission to OMB known as an exhibit 300) provide aspects of a high-level acquisition strategy, such as identifying the ICE contracts that are being used and are to be used to acquire products and program support services. An acquisition plan was issued in February 2006, and it includes a statement of the capabilities to be delivered through these contracts. To manage and oversee the contracts, including helping ensure compliance with contract performance criteria and Atlas program objectives, the program hired a COTR in November 2006. In addition, the business case issued in December 2005 provides details on alternatives, cost, and schedule. The program plans to issue an updated business case and cost-benefit analysis by September 2007 to reflect emerging requirements and other program changes (e.g., project cost and schedule slippages). In addition, Atlas is also updating and revising its January 2006 acquisition program baseline, which is to include cost and schedule baselines for its projects, with the goal of finalizing it by March 2007. According to the program manager, Atlas is currently following the February 2005 *ICE System Lifecycle Management Handbook*.[17] The handbook addresses a number of key process areas such as project management and requirements development and management; however, it does not address certain key acquisition management activities such as solicitation and contract tracking and oversight. According to the Atlas program manager, he acknowledges this problem and plans to update the handbook by June 2007 to include the missing acquisition management activities. This area is more fully discussed in the Observations section of this briefing.

[17]U.S. Immigration and Customs Enforcement: *System Lifecycle Management Handbook, The Systems Development Lifecycle of Immigration and Customs Enforcement*, February 2005, version 1.0.

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Legislative Conditions

GAO Analysis of Atlas Compliance with Legislative Conditions (cont.)

Example of practices	Results of our analysis
Project Management Provides for the management of activities within the project office and supporting contractors to ensure a timely, efficient, and cost-effective acquisition.	ICE has established a program office with responsibility for managing the acquisition, deployment, operation, and sustainment of Atlas. The Atlas program management office is to be allocated funding of $2.3 million via the Transformation Planning project in the expenditure plan. The current staffing of the program office consists of a program manager, who is also the deputy chief information officer; a deputy program manager; a manager for each of the seven Atlas projects; and other personnel (e.g., a business analyst or a communications specialist). According to the program manager, the program office is now fully operational. In addition, a project plan for each of the projects was approved by the program manager in the latter part of 2006.

Source: GAO analysis of DHS data.

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Legislative Conditions

Condition 4 partially satisfied. DHS partially satisfies the legislative condition requiring that the plan include a certification by the department's CIO that an IV&V agent is currently under contract for the project.

In an October 25, 2006, letter to ICE's CIO, DHS's Deputy CIO certified that an IV&V agent is under contract for Atlas. However, there are unresolved issues with the Atlas program's efforts in this area. First, in the Deputy CIO's letter, he requested additional information and made recommendations regarding the IV&V agent, asking for a response by January 31, 2007. Specifically, this official

- requested a copy of the IV&V contract and the agent's work plan in order to validate, among other things, whether planned IV&V activities are in accordance with industry quality standards and whether the agent has sufficient staff and
- recommended that the Atlas program (1) review whether the information assurance and security experience of key IV&V personnel was sufficient and (2) appoint a full-time COTR before the end of the first quarter of 2007.

The program manager stated that he is currently drafting the response on behalf of ICE's CIO with the goal of transmitting it to DHS by the first or second week of February 2007.

Objective 1 Results
Legislative Conditions

Second, as we have previously reported,[18] the independence of an IV&V agent is critical to providing management with objective insight into program processes and associated work products. We also reported that to be effective, the verification and validation function is to be performed by an entity that is independent of the processes and products that are being reviewed. When the agent engaged to provide the service is a contractor, a practice to help ensure independence is to include in the agent's contract a provision that prohibits the agent from soliciting, proposing, or being awarded program work other than the IV&V services and products.

The contract that Atlas awarded to its IV&V agent (dated Sept. 13, 2006) does not include such a provision. Instead, the contract states that the contractor will notify the agency of any potential conflicts of interest in performing work under the contract. The Atlas program manager told us he did not believe incorporating the contractual provision called for by the key practice was necessary because the agent's only line of work is performing IV&V activities, and he agreed to provide documentation to support this. He also said that in the event the agent solicited, proposed, or is awarded other work on the Atlas program, he would replace the agent with one that was independent. However, the program manager did not provide documentation to IV&V being the agent's sole line of business. In addition, having to replace an agent could delay program activities and is not consistent with the key practice to avoid such problems. Consequently, until the practice to ensure independence is included in the agent's contract, there is an increased risk that the agent's independence could become impaired, resulting in the program being unable to rely on the agent's work.

[18]GAO, *Homeland Security: Recommendations to Improve Management of Key Border Security Program Need to Be Implemented*, GAO-06-296 (Washington, D.C.: Feb. 14, 2006).

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Legislative Conditions

Condition 5 satisfied. DHS and OMB satisfied the legislative condition requiring that the plan be reviewed and approved by the DHS Investment Review Board, Secretary of Homeland Security, and OMB.

- The DHS Deputy Secretary, who chairs the DHS Investment Review Board, approved the plan on May 11, 2006.
- OMB approved the plan on September 14, 2006.

Condition 6 satisfied. GAO satisfied the condition that it review the plan.

Our review was completed in January 2007.

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Objective 2 Results
Observation 1: Requirements Management

Observation 1: Atlas did not fully adhere to rigorous requirements development and management practices

Federal IT management guidance and relevant best practices[19] recognize the importance of effectively developing and managing system requirements. According to this criteria, well-defined requirements are important because they establish agreement among the various stakeholders on what the system is to do, how well it is to do it, and how it is to interact with other systems. Effective requirements development and management involves, among other things:

- establishing a requirements management policy;
- eliciting desired or required system capabilities from users and translating them into system requirements and obtaining approval from all stakeholders before deploying system capabilities;
- establishing a system concept of operations, which describes the business process to be supported and how users will interact with the proposed system, and defines system requirements;
- ensuring that changes to requirements are controlled and approved via a disciplined change control process as the system is developed and implemented; and
- maintaining bidirectional traceability, meaning that a given requirement can be traced backward to systems documentation and forward to the appropriate contract vehicle and system components that will satisfy the requirement and the test that will verify that it is satisfied.

[19]See, for example, Software Engineering Institute, Capability Maturity Model Integrated (CMMI), version 1.1 (March 2002).

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Objective 2 Results

Observation 1: Requirements Management

As we reported in July 2006,[20] ICE incorporated these practices in its *ICE System Lifecycle Management Handbook,*[21] which was issued in February 2005. However, the program did not fully follow these practices on its three key projects: Common Computing Environment (CCE), Integration, and ICE Mission Information. For example, on CCE, while the project established the *ICE System Lifecycle Management Handbook* as the policy to guide project efforts in developing and managing requirements, it did not

- document stakeholder comments as part of the requirements elicitation process and review and obtain stakeholder approval on requirements until approximately 1 year after deploying system capabilities;
- develop a concept of operations until several years after the project had been initiated, specifically, the project was initiated in March 2003 and began deploying system capabilities in December 2005, but the concept of operations was not developed until June 2006;
- follow a disciplined change management process for several years (between 2003 and 2006) after the project was initiated in March 2003 (during this time, requirements were introduced and implemented in an ad hoc fashion); and
- develop supporting analysis showing traceability between requirements, system design, and the contract.

[20]GAO-06-823.
[21]U.S. Immigration and Customs Enforcement: System Lifecycle Management, *The Systems Development Lifecycle of Immigration and Customs Enforcement*, version 1.0 (Washington, D.C.: February 2005).

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Objective 2 Results
Observation 1: Requirements Management

Our assessment of the extent to which the program complied with these practices on the three projects is shown in attachment II.

According to ICE officials, including the program and project managers, the reason that the Atlas projects did not fully adhere to these practices is due to the agency's expedited schedule to deploy modernized IT infrastructure capabilities to users in the wake of the events of September 11, 2001. Specifically, the officials stated that in their haste to deliver capabilities, the project manager skipped certain system management life cycle practices such as these.

The program manager acknowledged that requirements management needs to be improved and stated that key steps are being taken to ensure the projects closely follow the practices specified in the *ICE System Lifecycle Management Handbook*. He cited recent efforts by the CCE project manager to follow such practices on work recently initiated to refresh hardware, such as desktops and laptop computers across the agency. For example, in January 2007, the project conducted a workstation requirements analysis survey that was sent out to ICE users to identify requirements regarding the current workstation being used and issues that needed to be addressed in order to perform functions associated with their jobs. In accordance with the handbook, project staff drafted requirements, which they plan to finalize and approve by February 2007. While these are steps in the right direction on this particular project, the program manager was not able to provide us with a process improvement plan on how the program going forward would ensure compliance with requirements development and management practices across all of the projects.

Objective 2 Results

Observation 1: Requirements Management

Consequently, until Atlas fully implements effective requirements development and management practices programwide, it faces the increased likelihood that its projects will not meet user needs, operate as intended, or be delivered on time and within budget. In addition, there is evidence that this has already occurred. For example, on CCE, the delivery of its initial operating capability (the date when it was to begin providing common e-mail capabilities to ICE users) was delayed from September 2005 to December 2005. According to the project manager, this delay is attributable to, among other things, the project not following these practices. Specifically, the project manager told us that the project experienced numerous changes to requirements when it was transferred from the Department of Justice to DHS and that these changes were not documented well. As a result, there was extensive system rework to address missing requirements, which caused schedule delays.

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Objective 2 Results
Observation 2: Contract Management and Oversight

Observation 2: Key contract management and oversight practices are not fully implemented

The Software Engineering Institute's CMMI®[22] identifies best practices that are essential to effectively managing and overseeing contracts that support IT projects. These best practices include:

- establishing and maintaining a plan for managing and overseeing contracts,
- assigning responsibility and authority for performing contract management and oversight,
- training staff performing contract management and oversight activities,
- documenting each contract, including the statement of work and acceptance criteria,
- verifying and accepting contractor-provided products and services (i.e., deliverables), and
- conducting reviews with contactors to ensure that cost and schedule commitments are being met and risks are being managed.

As we reported[23] in June 2006, the Atlas program has largely established policies and procedures for these practices. While the program has implemented two of the practices, it has not fully implemented the other four. Specifically, our analysis of the program's performance of these practices, including efforts planned and underway, are shown in the following table.

[22]CMMI is registered in the U.S. Patent and Trademark Office by Carnegie Mellon University.
[23]GAO, *Homeland Security: Contract Management and Oversight for Visitor and Immigrant Status Program Need to Be Strengthened*, GAO-06-404 (Washington, D.C.: June 9, 2006).

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Objective 2 Results
Observation 2: Contract Management and Oversight

Implementation of Contract Management and Oversight Practices for Atlas Program

	CMMI practice	Implemented	GAO's assessment of compliance
1	Establish and maintain a plan for managing and overseeing contracts.	no	The program office issued a plan in February 2006 (referred to as an acquisition plan by program officials), but it does not describe contract management and oversight processes. Instead, the plan simply states that Atlas is to have a COTR work with program and contracting officials to administer the contracts. In November 2006, the DHS Acquisition Policy and Oversight Office, which is responsible for reviewing and approving the acquisition plan, stated that the plan lacked details on contract management and oversight and recommended that Atlas develop, among other things, a contract management and oversight plan and incorporate it into the acquisition plan. In addition, we reported in July 2006 that the *ICE System Lifecycle Management Handbook*, which is used to help manage the Atlas program, does not address certain key acquisition management activities, such as contract tracking and oversight.[24] Atlas's program manager stated that the acquisition plan and the handbook are being revised to include contract management and oversight activities. The acquisition plan is to be revised by March 2007 and the handbook by June 2007.
2	Assign responsibility and authority for performing contract management and oversight.	yes	The program office hired a COTR in November 2006, and ICE assigned the individual the responsibility and authority for Atlas contract management and oversight. The program office also provided one contractor staff member to assist the COTR. The contractor's responsibilities include helping develop statements of work, delivery schedules, and inspection and acceptance procedures. Further, each of the project managers has been tasked by the program manager to assist the COTR in identifying requirements and providing assistance in determining whether contractor deliverables meet requirements.

[24]GAO-06-823.

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Objective 2 Results

Observation 2: Contract Management and Oversight

Implementation of Contract Management and Oversight Practices for Atlas Program (cont.)

	CMMI practice	Implemented	GAO's assessment of compliance
3	Train staff performing contract management and oversight activities.	yes	The program's COTR has extensive contract oversight training and experience. For example, during 2005 and 2006, the official took 120 hours of training on topics such as systems acquisition management, COTR responsibilities, the use of government purchase cards, and contracting officer's representative mentoring. Further, this official's prior experience includes 5 years of managing and overseeing contracts at the Department of Defense, at a civilian agency, and in private industry. Also, all but one of the Atlas project managers received contract management and oversight training in October 2006. The remaining project manager is to receive the training by June 2007.
4	Document each contract, including clearly identifying the work to be performed and acceptance criteria.	no	On its three key projects—namely CCE, Integration, and the ICE Mission Information projects—the program did not satisfy this practice. Specifically, the contracts for these three projects did not clearly identify the work to be performed and the criteria for accepting contractor deliverables. Instead, the contracts identified the work to be performed and the acceptance criteria in general terms. For example, the contract for deploying CCE (a standard e-mail system agencywide) states that the contractor is responsible for providing deployment services, but does not identify that deploying a standard e-mail system is one of those services. Similarly, regarding acceptance criteria, the CCE contract states that the contractor will provide monthly status reports, but does not identify how the program will determine whether the deliverable is acceptable, such as describing tests to be performed. Program officials, including the program manager and the COTR, acknowledged that the statement of work and the acceptance criteria are not clearly defined, and that this makes contract administration difficult. They added that this difficulty extended to the other Atlas contracts because the program managed these contracts in the same manner as the other three. To address the problem, the program manager stated that he has tasked the COTR to work with project managers in developing clear statements of work and acceptance criteria for new contracts that are to be issued by late February 2007 to replace existing Atlas contracts that will begin to expire at that time.

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Objective 2 Results
Observation 2: Contract Management and Oversight

Implementation of Contract Management and Oversight Practices for Atlas Program (cont.)			
	CMMI practice	**Implemented**	**GAO's assessment of compliance**
5	Verify and accept the deliverables.	partially	The COTR's responsibilities include verifying and accepting contract deliverables. On the contracts of the three projects reviewed, the COTR, in assessing whether to accept deliverables, did not compare them with specific criteria in the contract because none existed (see the previous slide). Instead, the COTR, in consultation with the staff from the involved projects and ICE offices of budget and acquisition management, reviewed each contractor's invoices to assess whether it appeared what the contractor was charging was reasonable for the deliverables provided. If consensus was reached among these parties, then the COTR would approve the invoices for payment.
6	Conduct reviews with contractors to ensure cost and schedule commitments are being met and risks are managed.	partially	The program manager stated that he and the ICE CIO conduct reviews with program contractors on a quarterly basis to determine whether cost and schedule commitments are being met and to review project risks. However, he could not provide documentation that the meetings occurred due to the program not documenting the meetings. In addition, the contractors provide reports to program officials on their progress in meeting commitments and to identify risks related to each project. However, according to the program manager, assessing meaningful contractor progress from these reports is difficult without clearly defined work-to-be-performed statements and acceptance criteria.

Source: GAO analysis of DHS data.

Objective 2 Results

Observation 2: Contract Management and Oversight

The Atlas program manager stated that the program did not fully adhere to these practices due to it not having until recently a COTR to manage and ensure compliance with contract management and oversight requirements. He also stated that to strengthen the program's compliance with such practices, he has tasked the COTR with (1) revising the acquisition plan (by March 2007) to provide detailed guidance on how Atlas will manage and oversee contracts, (2) revising the *ICE System Lifecycle Management Handbook* by June 2007 to incorporate key contract management activities such as contract tracking and oversight, and (3) preparing statements of work (beginning in February 2007) for future contracts to clearly define Atlas work statements and acceptance criteria. While these are steps in the right direction, they are works in progress and, as such, have not been completed.

Until these steps and the other practices are fully implemented and institutionalized, Atlas faces the risk that it will not deliver required capabilities and promised benefits on time and within budget. It also makes the program vulnerable to contract mismanagement.

Objective 2 Results
Observation 3: Risk Management

Observation 3: Key risk management practices have yet to be implemented

Federal guidance and related best practices[25] identify key practices essential for effectively managing risks that may impact an IT project. They include, among other things:

- identifying and prioritizing risks as to their probability of occurrence and impact, as well as documenting them in an inventory;
- developing and implementing the appropriate risk mitigation strategies; and
- reporting to management on the existence and status of risks and progress in implementing mitigation strategies.

In July 2006, we reported[26] that the program had developed a risk management plan and process to guide program office staff in managing risks throughout each project's life cycle. We also reported that although the program had recently begun to implement the risk management process, a complete inventory of risks had not been developed. Since then, the program has taken additional steps to implement risk management. For example, the program hired a risk management coordinator to maintain and update the risk management plan, facilitate risk assessments, track efforts to reduce risks to acceptable levels, and develop and conduct risk management training. In addition, the program has conducted periodic risk management meetings and quarterly program management meetings to review the program's progress in managing risks.

[25]See, for example, Software Engineering Institute, *Capability Maturity Model Integrated (CMMI)*, version 1.1 (March 2002).
[26]GAO-06-823.

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Objective 2 Results
Observation 3: Risk Management

Further, the program conducted risk management training with project managers on October 24, 2006. The training included guidance on, among other things, adhering to key risk management practices such as preparing risk assessments and developing risk mitigation strategies.

However, the program has yet to implement other key practices. First, it does not have a transparent, documented, and traceable process for inventorying and resolving risks. For example, the January 23, 2006, inventory identified three risks related to data/information, security, and privacy. These risks were previously reported as having a medium probability of occurrence and a low impact. However, the January 23, 2007, inventory did not include these risks. Program officials explained that the discrepancy with the number of risks in the inventory is that the program periodically closes risks and removes them from the inventory. However, these officials provided documentation on only one risk that had been removed from the inventory, and it did not include a clear rationale for why the risk had been removed. In addition, the officials were unable to provide documentation showing that the other two risks had been closed and removed and the justification for doing so.

Second, while the risk management plan defines a process and associated practices for developing risk mitigation strategies, the program has not fully implemented them. Specifically, the plan specifies that mitigation strategies are to include:

- a rationale for mitigation strategy chosen;
- an explanation of the impact on program performance;

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Objective 2 Results
Observation 3: Risk Management

- a proposed schedule showing milestones for initiation, significant risk mitigation activities, and completion; and
- the official responsible for implementing and tracking mitigation activities.

Out of the 61 risk mitigation strategies documented in the January 23, 2007, inventory:

- all included a rationale for mitigation strategy chosen;
- 13 did not include an explanation of the impact on program performance;
- none included a proposed schedule showing milestones for initiation, significant risk mitigation activities, and completion; and
- all identified officials responsible for implementing and tracking mitigation activities.

Third, although the risk management plan calls for developing a process for elevating risks to management's attention, the program has not developed and implemented such a process. According to the program manager, in lieu of a defined escalation process, program officials do make ICE's deputy CIO (and sometimes the CIO) aware of program risks as part of quarterly program management meetings, but acknowledged that, for the most part, such reviews—and thus the escalation of risks—occur in an ad hoc fashion and are not documented.

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Objective 2 Results

Observation 3: Risk Management

The program manager stated that the reason for the current state of the program's risk management was that the process is new and that it will take time for the risk program to fully mature. He added that the program is in the process of addressing these weaknesses by, for example, revising the risk management plan to include procedures for (1) reporting to management on the existence and status of risks and (2) closing risks. More recently, on January 25, 2007, the program manager provided us with the revised plan; it calls for the risk management coordinator to, among other things, establish processes for elevating and reporting to management risks that are likely to occur and have a high impact. Further, at our February 1, 2007, exit meeting with program officials, they provided a document, approved on January 25, 2007, defining their processes for elevating risk. While these are steps in the right direction, the program manager acknowledged that program staff were just beginning to implement the processes.

Until the Atlas program fully implements and institutionalizes risk management, there is increased probability that program risks will not be proactively mitigated and, thus, will become actual program cost, schedule, and performance shortfalls.

Objective 2 Results
Observation 4: Performance Management

Observation 4: Atlas program still implementing performance management practices essential to measuring progress against commitments

As we have previously reported,[27] to enable Atlas program management to measure progress and make well-informed investment decisions, it is important for the program to develop and implement rigorous performance management practices that include, among other things, properly aligned goals and anticipated achievements that are defined in measurable terms. In our September 2005 report,[28] we recommended that the Atlas program develop and implement an effective performance management system that includes such goals and measures. More recently, we reported[29] in July 2006 that Atlas had begun taking steps to implement performance goals and measures, but had not yet completed defining and implementing them. For example, the program had developed goals for four of its seven projects but had not done so for its three other projects, which were

- Transformation Planning,
- Architecture Engineering, and
- Data Center Migration.

We also reported that the program had developed measures to gauge progress on the goals, but had not yet begun to track their progress.

[27]GAO-06-823.
[28]GAO, *Information Technology: Management Improvements Needed on Immigration and Customs Enforcement's Infrastructure Modernization Program*, GAO-05-805 (Washington, D.C.: Sept. 7, 2005).
[29]GAO-06-823.

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Objective 2 Results

Observation 4: Performance Management

Since then, the program has taken additional steps to define and implement performance goals and measures. For example, the program identified 13 goals for five of its seven projects that it has been using to measure progress during fiscal year 2006. Twelve of these goals either were expected to be finished by fiscal year 2006 or were expected to have some interim measure completed during fiscal year 2006. The expenditure plan identified an additional goal (goal 12) that did not have an interim measure, but rather was expected to be finished by December 2006.

In addition, the program now reports it is measuring progress against these performance goals by, for example, using them to discuss each project's status and progress at quarterly program management reviews.

The following table provides our analysis of the program's performance goals against its reported progress (as of Sept. 30, 2006).

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Objective 2 Results
Observation 4: Performance Management

Atlas Project Progress in Meeting Fiscal Year 2006 Goals

Project	Goal	Did Atlas meet goal?	If no, what is progress against goal?
Overall Program Management/ Transformation Planning	Goal 1: 100 percent of Atlas project activities that are managed with less than a 10 percent variance in cost and schedule per fiscal year	no	93 percent
	Goal 2: 30 percent reduction in ICE's operations and maintenance contribution for network services	yes	not applicable
	Goal 3: The enterprise project management tool, Primavera, was scheduled for installation, configuration, and deployment in third quarter of fiscal year 2006	no	deployed in 4th quarter of FY 2006
	Goal 4: Performance management processes and balanced scorecard to be developed and implemented in fourth quarter of fiscal year 2006	no	*
Common Computing Environment	Goal 5: 100 percent of ICE personnel using the DHS standard Microsoft Outlook E-mail platform	no	95 percent
	Goal 6: 33 percent progress in implementing a refresh of ICE personnel desktop equipment	no	20 percent
	Goal 7: 100 percent of ICE office sites achieving workforce productivity upgrades through implementation of ICE e-mail standard, backend server upgrades, and ICENet connections	no	95 percent

*While the program did not meet this goal in the fourth quarter of FY 2006 as planned, program officials told us that the program has efforts underway to reach this goal, but did not provide a date for when it would be accomplished.

Objective 2 Results
Observation 4: Performance Management

Atlas Project Progress in Meeting Fiscal Year 2006 Goals (cont.)			
Project	**Goal**	**Did Atlas meet goal?**	**If no, what is progress against goal?**
Integration	Goal 8: 100 percent of ICE sites using DHS standard high-speed network circuits	no	73 percent
	Goal 9: 100 percent of ICE office sites achieving workforce productivity upgrades through implementation of ICE e-mail standard, backend server upgrades, and ICENet connections	no	73 percent
ICE Mission Information	Goal 10: 14 percent of investigative and enforcement personnel with access to decision support system data marts	yes	not applicable
	Goal 11: 8 percent increase in ICE investigative and enforcement systems incorporated into ICE decision support system consolidated data marts	yes	not applicable
	Goal 12: The ICE Mission Information project will implement a technology model in the first-quarter of FY 2007 for the integration of systems and information throughout ICE within the framework of the DHS EA.	Not applicable (target goal set for FY 2007, but not for FY 2006)	**
Information Assurance	Goal 13: 30 percent of ICE users employing single sign-on capability for systems access.	No	0 percent

Source: GAO analysis of DHS data.

**The program reported that it met this goal in fiscal year 2007, as planned.

Objective 2 Results

Observation 4: Performance Management

However, while the program has taken additional steps, it has yet to fully implement and institutionalize its performance goals and measures. Specifically, the program has not yet developed goals for these two projects—Architecture Engineering and Data Center Migration. According to program officials, they have developed draft goals for these projects and are in the process of having them reviewed by management, but officials did not provide a date for when the goals are to be approved and implemented.

In addition, the progress on the performance goals, as reported by the program, shows mixed results. As shown in the chart, of the 12 goals, the program has met only 3 of them. Of the remaining 9, Atlas was close to meeting its fiscal year 2006 targets. For example, on goal 5, the fiscal year 2006 target was 100 percent of ICE personnel using the DHS standard Microsoft Outlook e-mail platform, and the program reported 95 percent of users have been migrated. Also, on goal 8, the fiscal year 2006 target was 100 percent of ICE sites using DHS standard high speed network circuits, and the program reported 73 percent of ICE sites are using the circuits.

Further, underlying data used by the program to measure performance may not be reliable in all cases. For example, on goal 1, the program uses project cost and schedule data from the 2005 Atlas business case in measuring progress against the goal, including determining whether variances have occurred. However, these data are out of date (i.e., they do not reflect project cost and schedule slippages that have occurred since 2005) and are currently being revised as part of a larger effort to update the entire business case to reflect overall program changes.

Objective 2 Results

Observation 4: Performance Management

In addition, the program relies on its project managers to develop estimates of where their projects should be (with respect to schedule) given funds used to date. The program official responsible for determining progress against goal 1 told us that this is a key weakness of the performance management process because it allows project managers to report on their progress without the program having a means to verify and validate their assessments. The program manager acknowledged that having and using reliable information to support measurement against goals is a challenge across all of the program measures, and the program plans to address the problem by, among other things, updating the business case and supporting cost and schedule analyses (which are to be issued in September 2007) and by implementing and using an enterprise project management tool (planned to start in October 2007) that calculates progress against funds used for each project. While these are steps in the right direction, it also means it will be months before the program has data it can rely on to measure performance.

According to the program manager, the program's limited progress in implementing performance management practices is attributable in large part to (1) the program's evolving of its performance goals as the program evolves; (2) performance management being new to the program, and it will take time for the program's processes to fully mature; and (3) the enterprise project management tool's taking longer to implement than originally planned. According to the program manager, the program recently purchased the tool and plans to begin using it for all projects beginning in October 2007. Nonetheless, until the program completes implementation and institutionalization of its performance management capabilities, including well-defined goals and measures, its managers will not have the necessary information for measuring progress and making well-informed investment decisions.

Conclusions

The fiscal year 2006 Atlas expenditure plan, in combination with related program documentation and program officials' statements, satisfies or partially satisfies the legislative conditions set forth by Congress. However, this satisfaction is based on plans and commitments that provide for meeting these conditions rather than on completed actions to satisfy the conditions. In addition, while steps are being initiated that are intended to address significant program management weaknesses, a number of improvements, including those recommended in our past reports, have yet to be implemented. Further, the program has not fully achieved many performance goals that it set out to accomplish over the past year. These factors continue to put the program at risk and call for heightened and sustained management attention to expeditiously address and resolve the issues.

Thus, there is much that still needs to be accomplished to minimize the risks associated with the program's capacity to deliver promised IT infrastructure capabilities and benefits on time and within budget. This includes demonstrating better progress against established performance goals in the coming year. Given that hundreds of millions of dollars are to be invested and the program is critical to supporting the ICE mission, it is essential that DHS follow through on its commitments to build the capacity to effectively manage the program. Proceeding without this capacity introduces unnecessary risks to the program and potentially jeopardizes its viability for future investment.

Recommendations for Executive Action

To minimize risks to the Atlas program, we recommend that the Secretary of Homeland Security direct the Assistant Secretary for Immigration and Customs Enforcement to ensure that ICE follows through on its commitments to implement effective management controls and capabilities by implementing the following five recommendations:

- Employing practices essential to ensuring that the Atlas program's IV&V agent is and remains independent, including incorporating requirements in future contracting actions such as the renegotiation or recompetition of the current independent verification and validation contract, which will prohibit the agent from soliciting, proposing, or being awarded program work other than providing independent verification and validation services and products.
- Fully adhering to requirements development and management practices, including those specified in ICE's policies and procedures. This should also include having the Atlas program manager develop a process improvement plan for all of the projects that is consistent with the *ICE System Lifecycle Management Handbook* and provide for making the program manager and project managers responsible and accountable for rigorously adhering to the requirements in the handbook.
- Fully implementing key contract management and oversight practices, including those specified in ICE's policies and procedures. This should also include ensuring that the Atlas program manager, working with the program's COTR, follow through on planned efforts to strengthen the program's compliance with these practices by (1) revising the acquisition plan by March 2007; (2) revising the *ICE System Lifecycle Management Handbook* by June 2007 to incorporate key contract management activities such as contract tracking and oversight; and (3) preparing statements of

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Recommendations for Executive Action

work (beginning in February 2007) for future contracts to clearly define Atlas work statements and acceptance criteria.

- Completing implementation of planned risk management activities. This should include (1) fully implementing and institutionalizing procedures for reporting to management on the existence and status of risks and progress in implementing mitigation strategies and (2) updating the risk inventory to include risks for all projects and risk areas.
- Improving program performance management, including developing performance goals for projects that do not have goals and reporting on their progress in the fiscal year 2007 expenditure plan. Further, the program should assess whether the data being used to measure progress are reliable, complete, and accurate.

Agency Comments

In their February 1, 2007, oral comments on a draft of this briefing, ICE officials, including the Deputy CIO and Atlas program manager, agreed with our findings, conclusions, and recommendations. These officials also provided technical comments, which we incorporated in the briefing as appropriate.

Attachment I
Detailed Scope and Methodology

To accomplish our objectives, we

- analyzed the fiscal year 2006 Atlas expenditure plan and supporting documents against legislative conditions and other relevant federal requirements, guidance, and best practices to determine whether the conditions were met (in doing so, we considered the conditions met when the expenditure plan, including supporting program documentation and program officials' representations, either satisfied or provided for satisfying the conditions) and

- evaluated supporting documentation and interviewed program and other involved ICE and DHS officials to determine progress in establishing capabilities in program management areas, such as acquisition planning, enterprise architecture, project management, requirements development and management, contract management and oversight, and risk management and performance management.

In assessing the management of requirements development and contract management and oversight, we focused on three projects—Common Computing Environment, Integration, and ICE Mission Information—that collectively accounted for approximately 75 percent of the funds provided to the program and the Atlas program manager identified as being the most critical to the program's success and ICE's mission. For DHS and ICE data that we did not substantiate, we made appropriate attribution indicating the data source. We conducted our work at ICE and DHS headquarters in Washington, D.C., from November 2006 through January 2007 in accordance with generally accepted government auditing standards.

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Attachment II
GAO Analysis of Requirements Management

ICE Requirements Management Efforts Compared with Federal IT Management Guidance and Best Practices

Establish a requirements management policy

Project	Implemented	GAO's assessment of compliance
CCE	yes	In February 2005, the CCE project established the *ICE System Lifecycle Management Handbook*[30] as the policy to guide project efforts in developing and managing requirements. The handbook requires requirements development and management activities, such as eliciting desired system capabilities from users and translating them into requirements and obtaining approval by all stakeholders.
Integration	yes	In February 2005, the Integration project established the *ICE System Lifecycle Management Handbook* as the policy to guide project efforts in developing and managing requirements.
ICE Mission Information	yes	In February 2005, the ICE Mission Information project established the *ICE System Lifecycle Management Handbook* as the policy to guide project efforts in developing and managing requirements.

Source: GAO analysis of DHS data.
Legend: Yes=established/implemented; No=not established/implemented; Partially=some, but not all, actions are implemented or actions are in progress of being implemented

[30] *U.S. Immigration and Customs Enforcement: System Lifecycle Management, The Systems Development Lifecycle of Immigration and Customs Enforcement, version 1.0*. (Washington, D.C.: February 2005).

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Attachment II
GAO Analysis of Requirements Management

ICE Requirements Management Efforts Compared with Federal IT Management Guidance and Best Practices (cont.)

Elicit desired or required system capabilities from users and translate them into system requirements and obtain approval by all stakeholders

Project	Implemented	GAO's assessment of compliance
Common Computing Environment	partially	In 2003, the CCE project elicited system capabilities from component and departmental users. Although the capabilities elicited from the users were not documented, project officials told us they translated the users' input into system requirements, issuing a draft requirements document in June 2004. Although the draft requirements had not yet been reviewed and approved by system stakeholders, the project began deploying system capabilities in December 2005. Project officials told us that they planned to finalize the requirements document, including obtaining stakeholder approval, and in January 2007, they provided us with a finalized and approved version of the requirements document.
Integration	partially	In 2003, Integration elicited system capabilities based on a directive from the DHS Deputy Secretary and departmental users. The capabilities were elicited from users at requirements workshops and documented. Project officials told us that they translated the users' input into system requirements, issuing a draft requirements document on June 15, 2005. Although the draft requirements have not yet been reviewed and approved by system stakeholders, the project began deploying system capabilities in March 2006. Project officials told us that they have obtained stakeholder approval on the requirements document; however, they could not provide documentation showing this had occurred.
ICE Mission Information	partially	Divided into four phases, the ICE Mission Information project is currently in the process of eliciting user system capabilities for each of the respective phases. For the first phase, the project has elicited system capabilities from its users, but has not documented them. Project officials told us that they translated the user capabilities into system requirements, issuing a draft requirements document dated August 7, 2006. Project officials stated that they planned to finalize the requirements document, including obtaining system stakeholder approval, but could not provide a date by when this was to occur. For the other three phases, the project has not completed eliciting requirements and documenting capabilities, but project officials told us they planned to do so in accordance with the practices. However, they were not able to provide a plan and associated timetable for when they are to complete the practices.

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Attachment II
GAO Analysis of Requirements Management

ICE Requirements Management Efforts Compared with Federal IT Management Guidance and Best Practices (cont.)		
Develop a system concept of operations		
Project	**Implemented**	**GAO's assessment of compliance**
CCE	partially	CCE did not develop a concept of operations, which is integral to defining system requirements, until 3 years after the project had been initiated. Specifically, the project was initiated in March 2003 and began deploying system capabilities in December 2005, and the concept of operations was developed in June 2006.
Integration	no	According to the Integration project manager, a concept of operations was developed. However, Integration was not able to provide documentation showing it had been developed.
ICE Mission Information	partially	The project issued a draft concept of operations on October 12, 2006. The ICE Mission Information project manager told us that the project is in the process of finalizing the document but did not provide a date for when the document would be completed.

Source: GAO analysis of DHS data.

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Attachment II
GAO Analysis of Requirements Management

ICE Requirements Management Efforts Compared with Federal IT Management Guidance and Best Practices (cont.)		
Ensure that changes to requirements are controlled and approved via a disciplined change control process as the system is developed and implemented		
Project	**Implemented**	**GAO's assessment of compliance**
CCE	partially	CCE did not follow a disciplined change management process for 3 years after the project was initiated in March 2003; during this time, requirements were introduced and implemented in an ad hoc fashion. The program has taken steps to improve change management efforts by (1) developing an Atlas Configuration Management Plan on February 15, 2006; (2) developing a CCE change control board charter on November 1, 2006; and (3) developing a change process that provides the procedures for reviewing and approving CCE change requests. The project is currently in the process of implementing these changes. Project officials told us that the project recently began conducting CCE change control board meetings in September 2006. According to the change process, CCE is required to ensure that technical, cost, and schedule impacts are considered before approval is granted. Although program documentation showed the technical impact of the change, the cost and schedule impacts were not documented.
Integration	partially	The configuration control board and change control process that Integration follows was developed by DHS's Infrastructure Transformation Program, which is the departmental organization (commonly referred to as the "network steward" by DHS and ICE officials) responsible for ensuring that all DHS components migrate from their existing networks to the DHS network. However, Integration officials could not provide evidence of compliance with the network steward's change control process.
ICE Mission Information	partially	The project plans to control and approve changes via a change control process when the requirements are developed and finalized. The project plans to do so consistent with the guidance specified in the *ICE System Lifecycle Management Handbook*. As previously noted, project officials were not able to identify when the requirements would be finalized and approved.

Attachment II
GAO Analysis of Requirements Management

ICE Requirements Management Efforts Compared with Federal IT Management Guidance and Best Practices (cont.)		
Maintain bidirectional traceability, meaning that a given requirement can be traced backward to systems documentation and forward to the appropriate contract vehicle and system components		
Project	**Implemented**	**GAO's assessment of compliance**
CCE	partially	In December 2006, CCE developed a requirements traceability analysis document—commonly referred to as a matrix—to show bidirectional traceability between the requirements and system documentation. While the project identified requirements, it did not trace requirements to the system documentation, such as the system design and test plans. Additionally, the project did not trace requirements to the existing contract task order.
Integration	partially	In June 2005, Integration developed a requirements traceability analysis document—commonly referred to as a matrix—to show bidirectional traceability between the requirements and system documentation. While the project identified requirements, it did not trace requirements to the system documentation, such as the system design and test plans. Additionally, the project did not trace requirements to the existing contract task order.
ICE Mission Information	partially	The project plans to ensure traceability among requirements, system documentation, and the existing contract task order when the requirements are developed and finalized. The project intends to do so in accordance with the guidance specified in the *ICE System Lifecycle Management Handbook*. As previously noted, project officials were not able to identify when the requirements would be finalized and approved.

Source: GAO analysis of DHS data.

Comments from the Department of Homeland Security

U.S. Department of Homeland Security
Washington, DC 20528

2007 APR -6 PM 1:44

Homeland Security

April 5, 2007

Mr. Randolph C. Hite
Director
Information Technology Architecture and
Systems Issues
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Hite:

Thank you for the opportunity to review and comment on the Government Accountability Office's (GAO's) draft report GAO 07-565 entitled *INFORMATION TECHNOLOGY: Immigration and Customs Enforcement Needs to Fully Address Significant Infrastructure Modernization Program Management Weaknesses.*

U.S. Immigration and Customs Enforcement (ICE) concurs with the draft report's five recommendations. The following describes the actions ICE has taken or plans to take to implement the recommendations.

Recommendation 1: Employ practices essential to assuring that the Atlas program's independent verification and validation agent is and remains independent, including incorporating requirements in future contracting actions such as the renegotiation or recompetition of the current independent verification and validation contract, which will prohibit the agent from soliciting, proposing, or being awarded program work other than providing independent verification and validation services and products.

Response: Future Atlas contract actions will prohibit independent verification and validation (IV&V) agents from soliciting, proposing, or being awarded non-IV&V Atlas work to prevent a conflict of interest situation.

Recommendation 2: Fully adhere to requirements development and management practices, including those specified in ICE's policies and procedures. This should also include having the Atlas program manager develop a process improvement plan for all the projects that is consistent with the *ICE System Lifecycle Management Handbook* and provide for making the program manager and project managers responsible and accountable for rigorously adhering to the requirements in the handbook.

Response: The Atlas processes are being refined to fully comply with Systems Lifecycle Management standards. By May 31, 2007, ICE anticipates the implementation of an improvement plan that will address requirement development and management processes, training, and the establishment of a Change Control Board to govern and manage impacts.

Recommendation 3: Fully implement key contract management and oversight practices, including those specified in ICE's policies and procedures. This should also include ensuring that the Atlas program manager, working with the program's contracting officer's technical representative, follow through on planned efforts to strengthen the program's compliance with these practices by (1) revising the acquisition plan by May 2007, (2) revising the *ICE System Lifecycle Management Handbook* by June 2007 to incorporate key contract management activities such as contract tracking and oversight, and (3) preparing statements of work (beginning in February 2007) for future contracts to clearly define Atlas work statements and acceptance criteria.

Response: In November 2006, a full-time contracting officer's technical representative joined the Atlas program to implement industry compliant contract management and oversight policies. Furthermore, the Atlas Acquisition Plan is currently being revised and is proceeding ahead of the May 2007 schedule. The Atlas program will make the newly instituted contract tracking and management oversight processes available for incorporation into the next revision of the *ICE System Lifecycle Management Handbook* scheduled for release in June 2007. The use of a standardized statement of work (SOW) template with sections for detailed requirements and acceptance criteria has been instituted for the creation of all Atlas SOWs.

Recommendation 4: Complete implementation of planned risk management activities. This should include (1) updating the risk inventory to include risks for all projects and risk areas and (2) fully implementing and institutionalizing procedures for reporting to management on the existence and status of risks and progress in implementing mitigation strategies.

Response: The Atlas risk management and escalation processes have been refined to ensure effective risk management and better communication of risk, and were deployed in March 2007. Furthermore, the risk inventory has been updated to re-incorporate all risks previously archived due to their closed status, to report risk as it relates to impact on cost, schedule and performance, to detail risk mitigation strategy, and track status of risks and progress.

Recommendation 5: Improve program performance management, including developing performance goals for projects that do not have goals and reporting on their progress in the fiscal year 2007 expenditure plan. Further, the program should assess that the data being used to measure progress are reliable, complete, and accurate.

Response: Performance goals have been developed for all Atlas projects. Standard procedures to include quarterly assessments have been deployed and are currently employed to ensure measurement accuracy.

Thank you again for the opportunity to comment on this draft report and we look forward to working with you on future homeland security issues.

Sincerely,

Steven J. Pecinovsky
Director
Departmental GAO/OIG Liaison Office

GAO Contact and Staff Acknowledgments

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Staff Acknowledgments

In addition to the individual named above, Gary Mountjoy, Assistant Director; Nancy Glover; James Houtz; Jennifer Mills; Freda Paintsil; Madhav Panwar; Karl Seifert; and Kelly Shaw made key contributions to this report.

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