IMPLEMENTATION PLAN

Department of Homeland Security

Environmental Sustainability Information System

July 2010

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Contents

Executive Summary 1

Section 1. ESIS Project Summary 3

1.1 ESIS Project Scope, Size and Duration 4
1.2 Implementation Plan Purpose 4
1.3 ESIS Implementation Plan Project References 4
1.4 ESIS Conceptual Model 6
1.5 ESIS Module Descriptions 6
1.6 Proposed Technology and DHS Information Technology Interfaces 12

Section 2. ESIS Implementation Management 13

2.1 Top Management Support 13
2.2 Project Organization Chart 13
2.3 Roles and Responsibilities 14
2.4 ESIS Implementation Plan Tasks 17
2.5 ESIS Implementation Acquisition Funding and Approval Steps 19
2.6 ESIS Project Roll-Out Plan and Life Cycle 20

Section 3. ESIS Implementation Support 21

3.1 ESIS Implementation Hardware, Software, Facilities and Materials 21
3.2 Implementation Training 21
3.3 DHS Resource Staffing Plan 22
3.4 Performance Monitoring and Service-Level Requirements 22
3.5 Disaster Recovery 23

Section 4. ESIS Implementation Requirements by Organization 24

4.1 DHS HQ ESIS Implementation Requirements 24
4.2 COMPONENT Implementation Requirements. 25

Section 5. Managing Software Changes and Issue Management 27

5.1 Managing ESIS Software Change or Update Requests 27
5.2 Additional Project Controls with Budgetary Impacts 27
5.3 Issue Management 27
5.4 Issue Status Reporting 28

Section 6. ESIS Implementation Quality Management 29

6.1 Quality Standards 29

Section 7. Software Partner Performance Reviews 29

Appendix 1 – Terminology 30

Executive Summary

The Department of Homeland Security (DHS) Office of Occupational Safety and Health Programs is planning to implement an Environmental Sustainability Information System (ESIS) to fully integrate environmental compliance and sustainability management across the Department. This Implementation Plan (IP) details the steps required to deploy a comprehensive Department of Homeland Security-wide ESIS.

The users of the ESIS would be the following DHS component (COMPONENT) organizations:

- United States Citizenship and Immigration Services (USCIS)
- United States Coast Guard (USCG)
- Customs and Border Protection (CBP)
- Federal Emergency Management Agency (FEMA)
- Federal Law Enforcement Training Center (FLETC)
- Immigration and Customs Enforcement (ICE)
- Secret Service (US-SS)
- Science and Technology (S&T)
- Transportation Security Administration (TSA)
- US Visitor and Immigrant Status Indicator Technology (US-VISIT)

This plan provides the following:

- An overview description of the ESIS.
- An outline of major tasks required to successfully implement the system.
- A discussion of overall resources needed to support the implementation and long-term sustainment of the ESIS (e.g., hardware, software, facilities, materials and personnel).
- A discussion of key site-specific implementation requirements (e.g., training and COMPONENT membership in the Functional User Group).

An expected duration of 24 months would be needed to fully deploy the ESIS from the time funding is obligated and a notice-to-proceed is issued. Once implemented, the ESIS will transition into a sustainment support phase.

The life-cycle duration for the ESIS as described in this plan is set at 8 years, which includes 2 years of implementation activities and 6 years of long-term sustainment support.

A life-cycle not-to-exceed software cost threshold is set at $5 million. This amount applies to the software modules listed in the Business Case Analysis (BCA) and does not include future scope changes that could require change orders and additional resources.

DOCUMENT REVISION HISTORY

Version	Date	Description
Initial	4/20/2010	Draft Implementation Plan
Final	7/22/2010	Final Implementation Plan

Section 1. ESIS Project Summary

This Implementation Plan (IP) details the steps required to deploy a Department of Homeland Security (DHS)-wide Environmental Sustainability Information System (ESIS). The development and implementation of an ESIS provides DHS and its components (COMPONENTS) with the opportunity to establish a single, consolidated software system to manage the Department's environmental compliance and sustainability.

DHS comprises the following COMPONENT organizations:

- Citizenship and Immigration Services (CIS)
- United States Coast Guard (USCG)
- Customs and Border Protection (CBP)
- Federal Emergency Management Agency (FEMA)
- Federal Law Enforcement Center (FLETC)
- Immigration and Customs Enforcement (ICE)
- Secret Service (US SS)
- Science and Technology (S&T)
- Transportation Security Administration (TSA)
- United States Visitor and Immigrant Status Indicator Technology program (US VISIT)

The recommended software system would establish a web-accessible centralized repository of work-products used by DHS-HQ and its COMPONENT organizations to support environmental compliance and sustainability.

This document outlines the planning steps needed to manage a successful implementation process. This plan provides the following:

- An overview description of the ESIS.
- An outline of major tasks required to successfully implement the system.
- A discussion of overall resources needed to support the implementation and sustainment of the ESIS (e.g., hardware, software, facilities, materials and personnel).
- A discussion of key site-specific implementation requirements (e.g., training and COMPONENT membership in the Functional User Group).

This planning document follows the development of a Business Case Analysis (BCA) which outlined the justification for the ESIS. The next phases in the implementation process following the Implementation Plan and Funding Acquisition/Approval would be the Systems Requirements Specifications (SyRS) and Software Design Phases.

1.1 ESIS Project Scope, Size and Duration

The primary goal of the ESIS is to deploy an integrated, 'One-DHS' ESIS to manage sustainability and environmental compliance. Participants in the ESIS are expected to be the DHS COMPONENTS listed in section 1.0 above. The duration of the project is expected to last 8 years, with 2 years for implementation and 6 years for sustainment.

1.2 Implementation Plan Purpose

The purpose of this IP is to outline the steps needed to successfully implement the enterprise-wide ESIS.

1.3 ESIS Implementation Plan Project References

The key references used in the development of this plan are:

- Business Case Analysis – The BCA provided the justification for the proposed ESIS.
- DHS Acquisition Management Directive – Outlines the formal procedures that all emerging DHS IT projects need to go through to obtain implementation approval and funding. The directive describes the Department's Acquisition Life Cycle Framework (ALF), Acquisition Review Process (ARP), and the role played by the Acquisition Review Board (ARB).
- DHS Capital Planning and Investment Control (CPIC) Guide - Outlines the requirements needed to ensure effective decision-making and project management of DHS's capital asset acquisition investments. The CPIC guide highlights the need for the DHS Enterprise Architecture Board (EAB) to review proposed IT-related projects to ensure that the technology decisions are aligned with DHS mission priorities, and that the department's resources are wisely invested.

  In instances where the dollar value of the IT investment is high (over $50 million), the guide includes the requirement to produce a detailed Office of Management and Budget (OMB) Exhibit 300 document. OMB has introduced a rigorous approval process for justifying large federal investments in information technology. The planned ESIS, as configured currently, may not to exceed the lifecycle threshold cost that would require an OMB Exhibit 300 filing.

  The investment in the ESIS, however, would be included in the Department's Exhibit 53 document which still provides OMB with budget estimates for all of DHS's annual IT investments and a required Chief Information Officer (CIO) approval.
- A Systems Engineering Life Cycle (SELC) is a systems engineering framework for enabling efficient and effective delivery of capability to users, and is one of several key Department of Homeland Security (DHS) IT project. The SELC guides the definition, execution, and management of an interdisciplinary set of tasks required to plan, define, design, develop, implement, operate, and dispose of systems.

  The purpose of this DHS SELC Guide is to standardize the system life cycle process across DHS Components and to ensure that DHS capabilities are efficiently and effectively delivered. The DHS SELC Guide is designed to ensure that appropriate activities are planned and implemented in each stage of the life cycle to increase the project's success.

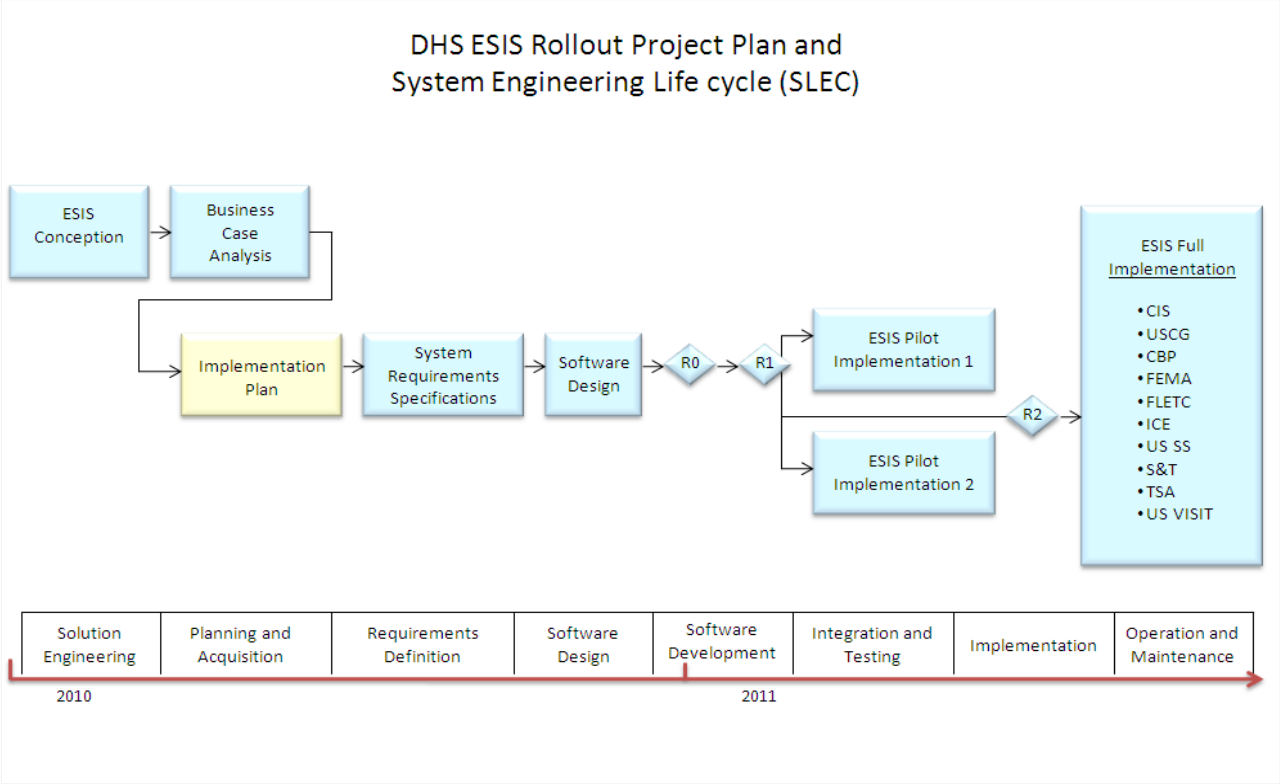
The guide outlines important deliverables (artifacts) that need to be produced during the implementation of an enterprise IT project. Project software owners, however, are expected to tailor the SELC and select the documents that are directly applicable to their systems.

This implementation plan follows the conceptual framework outlined in the DHS SELC Implementation Process methodology which comprises nine key process stages:

- Solution Engineering (focuses on the Acquisition Program)
- Planning
- Requirements Definition
- Design
- Development
- Integration and Test
- Implementation
- Operations and Maintenance
- Disposition

The ESIS Implementation Plan has been tailored to meet the unique aspects of this project, but still follows the SLEC's life cycle requirements as presented in Figure 1 below:

Figure 1: DHS ESIS Project Rollout Plan and System Engineering Life Cycle

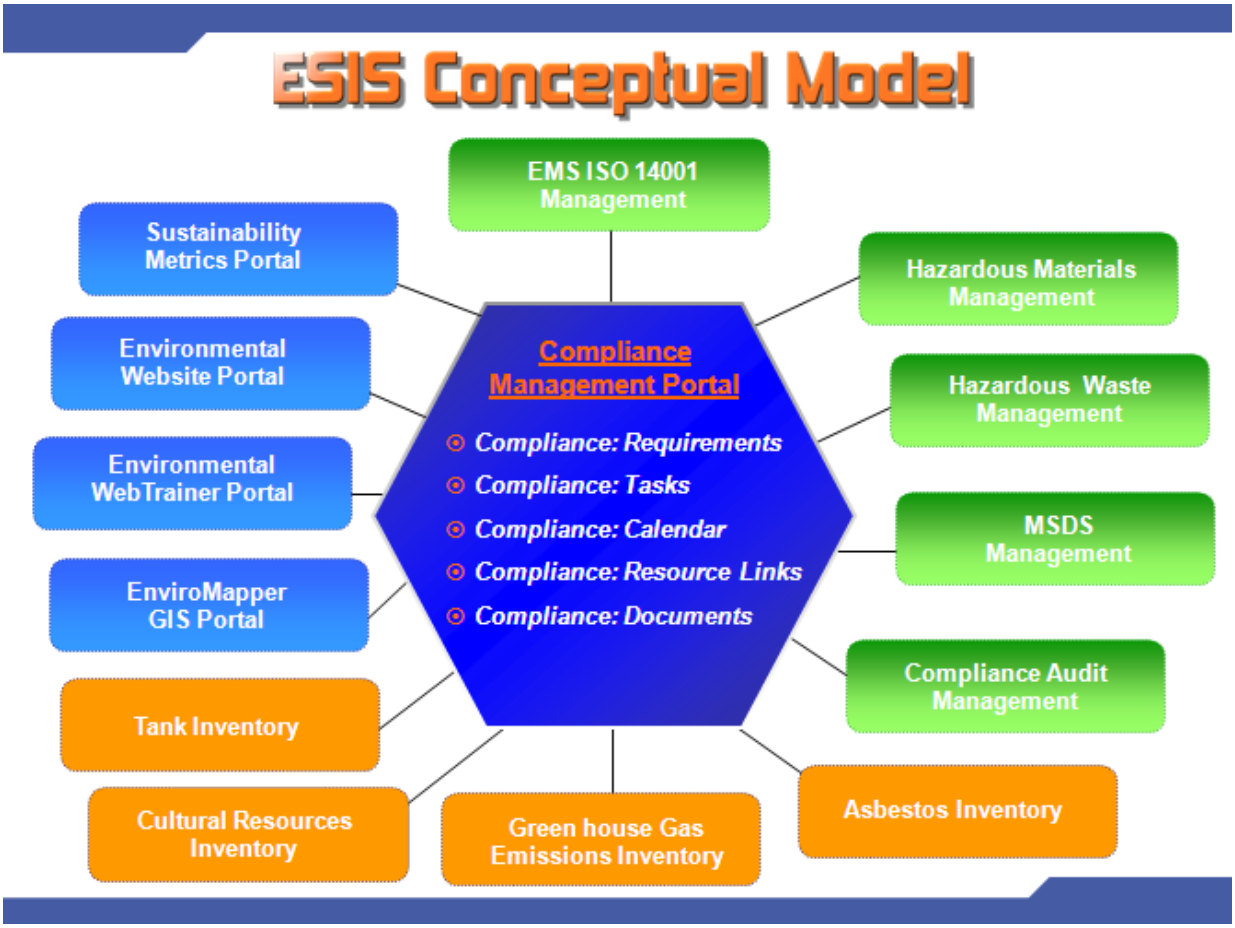


1.4 ESIS Conceptual Model

Figure 2 provides a high-level overview of the planned ESIS and its various modules. The green-colored modules represent management tools. The blue modules represent portal tools. The orange colored modules represent inventory tools.

The applications within the central hexagon include tools to assist with day-to-day environmental compliance and sustainability management.

Figure 2: ESIS Conceptual Representation of Proposed Core Software Modules



There is the expectation that software modules may be added or deleted during the ESIS project's lifecycle.

1.5 ESIS Module Descriptions

This section briefly outlines the proposed ESIS modules. Detailed descriptions of features and benefits of the modules are included in the BCA.

The ESIS, as currently proposed, would include the following modules:

- **Sustainability Portal** – This module would be used by DHS-HQ and its COMPONENTS to track and manage high-level Sustainability Metrics (many of which are currently being tracked by the DHS-HQ initiated Environmental Scorecard and associated Data-Calls). With one, integrated system, users of submitted data-call information would be able to quickly query and aggregate data received from the COMPONENTS by COMPONENT organization, location, or region to generate sustainability reports.

  This module would also include a reports builder which would allow headquarters personnel (DHS and COMPONENT) to create their own *ad hoc* reports.

- **Best Practices Repository Portal** –The Best Practices Repository would provide a tool for COMPONENTS and DHS-HQ users to post, view and share environmental best practices and environmental guidance information. Best Practices posted could include DHS and COMPONENT Management Directives, COMPONENT Best Management Practices (BMPs), Management Plans, and facility Standard Operating Procedures (SOPs).

- **ISO 14001-based Environmental Management System (EMS)** – All appropriate federal organizations are required to have an EMS per Executive Order 13423. This module would be used by COMPONENTS to manage work products associated with the development, management and ongoing sustainment of their ISO-14001-conformant EMSs.

  The module would also include an EMS sustainment tracking tool to guide each COMPONENT organization through the annual steps needed to maintain their management systems and derive the planned continuous improvement benefits expected from their EMSs, and prevent them from losing their vitality and focus.

- **Compliance Auditing** – This module would be used by COMPONENTS and DHS-HQ users to initiate and manage environmental compliance evaluations (audits) that are typically carried out every three years. The software would be used to schedule audits, manage audit checklists, record findings, resolve findings, and manage compliance resolution status reports that track how quickly findings are resolved.

  This module would incorporate a 'List Builder' capability that users could use to develop their own audit questions based on existing regulatory requirements. If standardized compliance checklists are already in use, these checklists can be posted into the software and used.

  Notices of Violation (NOVs) and fines information would also be recorded in this module and secured with high-level access controls.

  DHS – and COMPONENT - HQ users could also periodically query this module for high risk findings, so that areas with these types of findings can be targeted for appropriate long term

intervention (funding, training, etc) in addition to monitoring the effectiveness of implemented resolutions.

- **Compliance Requirements Portal and Guide Management** – This module would be used by COMPONENT users to list high-level annual compliance requirements such as permit due-dates, required training, planned inspections, and data-call submission deadlines. The module would then be used to track their completion or accomplishment.

  This module would include a feature used by the Coast Guard called Unit Environmental Guides (UEGs). UEGs are short documents (typically 1 – 5 pages in length) that summarize the key compliance requirements a facility needs to follow on a day-to-day basis to stay in compliance with environmental requirements. These guides also function as 'Turnover Books' that are used by environmental personnel when the primary environmental manager leaves or transitions out of an organization.

  This module would include email notification and reminder features that would send notifications into a users Microsoft Outlook email or calendar software.

  Color-coded reports would also give managers (and users) the ability to monitor completion of important compliance-related requirements on a monthly and annual basis.

  The module would also include document management capabilities to store compliance-related documentation (e.g., Management Plans and Standard Operating Procedures), and compliance records (e.g. permits and key correspondence that may be used for future reference or to prove compliance).

- **Tank Management** – This module would be used by COMPONENTS to manage key information about their regulated Underground and Above Ground Storage Tanks (USTs and ASTs). Information in this module would include tank characteristics, leak protection features, operational controls, tank contents and volume, potential release path-ways and tank closure information (if applicable).

  The module would also include an Operations and Maintenance (O&M) section to record ongoing maintenance actions associated with each regulated tank.

- **Cultural, Archaeological and Historical Resources Management** – This module will be used by COMPONENTS to inventory and manage regulated Cultural, Historical and Archeological Resources.

  This module would include high-level site information and pictures of these resources. The module will also include key documents associated with sites that need to be monitored (e.g., correspondence with State Historic Preservation Officers (SHPOs) and other regulatory personnel).

The software would also include O&M tools to record ongoing maintenance actions associated with each of the regulated sites.

- **Asbestos Management** – This module would be used by COMPONENTS to capture high level information from asbestos survey results detailing the location of suspected or actual asbestos. The primary goal of this module is to provide personnel who work at COMPONENT organizations with information about the possible or actual presence of asbestos, so that they can be aware of the associated risks of working in areas where the presence of asbestos is suspected or actually present.

  The software would also include O&M tracking tools to record actions associated with maintaining or remediating the sites that have Asbestos Containing Materials (ACMs).

- **Hazardous Materials Management** – This module would be used by COMPONENTS to:

  - Manage hazardous material characteristics, storage locations, and quantities for COMPONENT organizations with Emergency Preparedness and Community Right-to-Know (EPCRA) requirements, which require the annual generation of Tier II reports.

  - Assist organizations with the generation of Superfund Amendments and Reauthorization Act (SARA) FORM R and Toxic Release Inventory (TRI) reports.

  - Include a Material Safety Data Sheet (MSDS) capability that would serve to satisfy the Occupational Safety and Health Administration (OSHA) Hazard Communication (HAZCOM) requirements that mandate quick access to MSDS information wherever hazardous materials are used.

  - List the sources of all regulated hazardous chemical constituent information for hazardous materials used at COMPONENT organizations. Constituent information would then be used to accurately calculate the total amounts of hazardous materials at the ingredient level. The software would also be robust enough to track and report single ingredients within chemical mixtures.

  - Manage Authorized Use Lists (AULs) for large DHS organizations which would provide a higher level of control over the acquisition and use of hazardous and extremely hazardous materials. The implementation of AULs would also directly impact Pollution Prevention (P2) initiatives by limiting the amount of hazardous material ordered.

  - Include a compliance assurance section which would compare each COMPONENTs list of hazardous chemicals against various regulations and associated regulatory thresholds (e.g., hazard air pollutants (HAPs), Process Safety Management (PSM) chemicals, and SARA reportable threshold quantities).

- **Hazardous Waste Management** – This module would be used by COMPONENTS to document Resource Conservation and Recovery Act (RCRA)-managed hazardous waste. The software would standardize each COMPONENTs hazardous waste characterizations (profiles).

  The module would also track the sources of waste streams and help organizations manage the time constraints imposed on hazardous waste storage.

  The module would be able to provide COMPONENT waste managers with the number of days hazardous materials are stored at primary or satellite accumulation areas.

  The software would automate manifest creation and generate DD1348s if COMPONENT waste is disposed by a Defense Reutilization and Marketing Office (DRMO).

  As a final compliance step, the module would simplify the tracking of waste shipped to treatment, storage and disposal facilities (TSDFs), and provide a place to document manifest return information.

  Environmental Compliance Training Management –This module would provide a tool to present and manage environmental compliance training in an online or web-based format. This type of training would be particularly effective for COMPONENTS where personnel turnover is high (e.g., uniformed service men and women in the Coast Guard get rotated often and routinely serve short tours of duty).

  In most cases, web-based training could be less costly when compared to traditional classroom learning, which requires trainers, training facilities, materials, etc. It is noted, however, that some training is not appropriate to be delivered online, but for training that could be presented using this medium, this module would provide the COMPONENTs with an effective tool.

  When deployed by the COMPONENTS, this module could be used to host up to 20 customized training courses.

  The software would also allow for the documentation of all environmental compliance-related training by recording which personnel were trained, and when they were trained. The module would also provide the ability to generate printable certificates.

  Training reminders and management reports would ensure that employees or personnel working at COMPONENT organizations receive appropriate training before starting a new job or on a refresher basis as required.

- **Air Management** – This module would provide a tool to assist COMPONENTS with the tracking of permit-driven air compliance requirements.

  The module would be used to list all permitted emission sources, their attendant limits, and track actual emission quantities.

The module would also track completion of permit-driven tasks (e.g. monthly emission monitoring totals).

- **Water Management** – This module would be used by COMPONENTS that maintain National Pollutant Discharge and Elimination System (NPDES) or State Pollution Discharge and Elimination System (SPDES) permits.

  This module would be used to list all permitted emission sources (outfalls) and their attendant limits, and track actual water discharge quantities with analytical chemical results.

  The module would also track the completion of NPDES permit-driven tasks (e.g. quarterly or monthly Discharge Monitoring Reports (DMRs).

- **Green House Gas Emissions Management** – This module would be used by COMPONENT organizations to establish and track their Green House Gas (GHG) footprint and support the new regulatory GHG accounting, recordkeeping and verification requirements.

  The Environmental Protection Agency (EPA) recently released the EPA Rule on Greenhouse Gases which requires any organizations emitting over 25,000 pounds of GHGs to inventory their emissions and report Carbon Equivalent totals.

  Executive Order 13514 also requires large federal organizations to inventory, manage and reduce their GHG emissions.

- **Geographic Information Systems (GIS) Viewer Portal** – This lightweight GIS-viewing module would be used by COMPONENTS to generate maps highlighting the location of key environmental assets or risks that are tracked for compliance purposes.

  The maps would provide a view to important environmental compliance and sustainability information with links to underlying support data and documentation (e.g., drill-down capabilities).

  The GIS viewer would be able to work with existing ESRI Arc GISs, where these systems are in use and are well managed and maintained.

Following the finalization of this IP, a Systems Requirements Specification (SyRS) document will be written that would detail the specific final features and functionality for each of the modules listed above.

During this phase, key potential ESIS users, managers and stakeholders would be formed into a Functional User Group (FUG) and tasked with making sure that software features proposed meet their environmental compliance and sustainability requirements and also DHS's overarching requirements.

It is expected that the FUG would provide key input into the features, functions, enhancements and maintenance of the software throughout the ESIS life-cycle of eight years. Once the system is deployed,

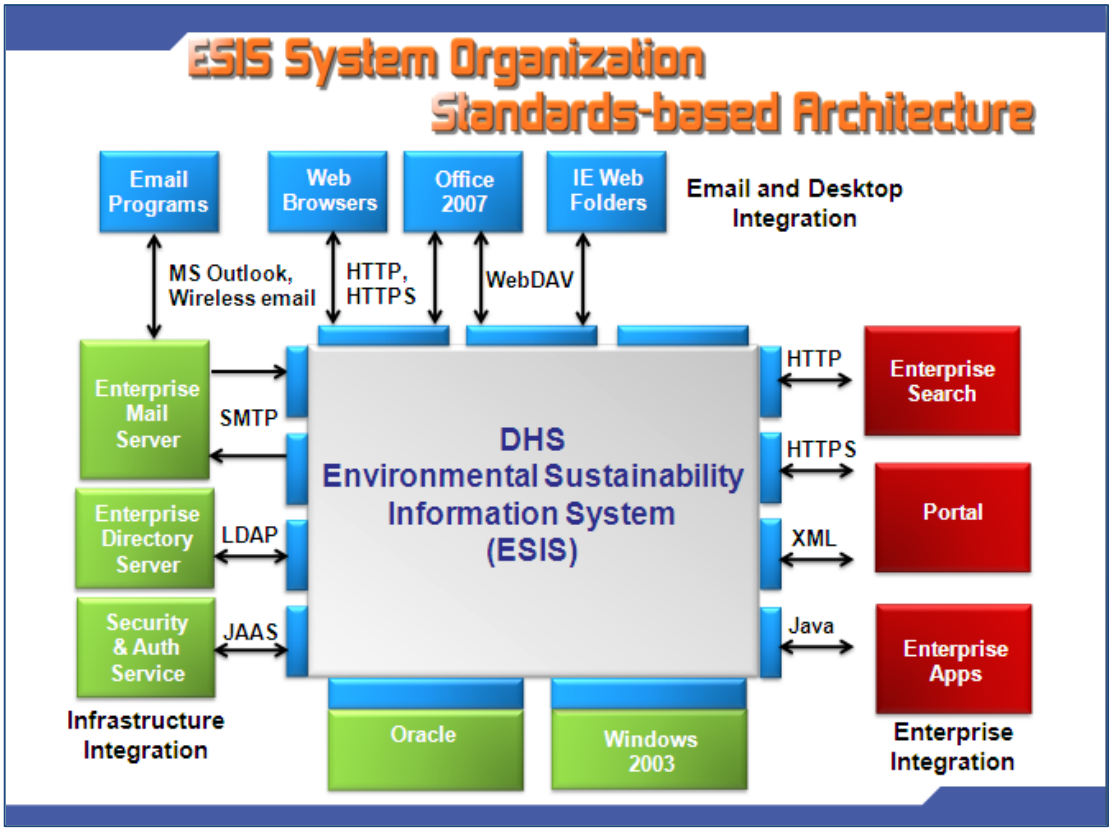
the FUG would periodically review Software Change Requests (SCRs) and make recommendations to the ESIS Program Manager to approve, fund and implement the proposed improvement changes.

1.6 Proposed Technology and DHS Information Technology Interfaces

The ESIS content data and documents will reside in an Oracle 10g database and coded using the Microsoft ASP.NET scripting environment.

Figure 3 outlines a conceptual diagram highlighting how the system will function within DHS's Information Technology framework.

Figure 3: ESIS System Organization and DHS IT Standards-Based Architecture



Section 2. ESIS Implementation Management

The following sections provide a description of the proposed ESIS implementation management structure and major tasks required to deploy the ESIS.

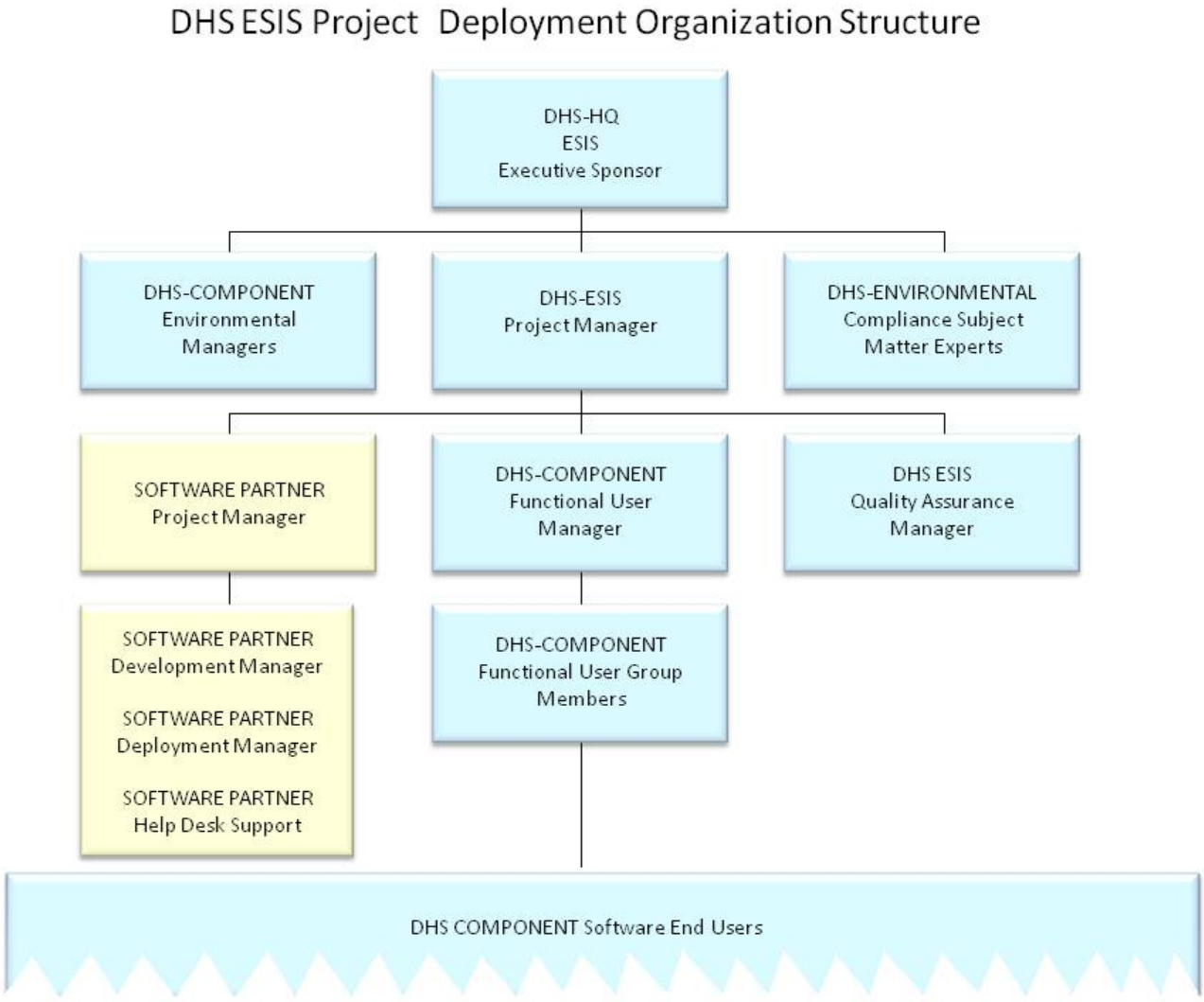
2.1 Top Management Support

Strong top management sponsorship is critical to the successful implementation of the ESIS. The primary proponent for the ESIS and Executive Sponsor would be a top-level DHS manager.

2.2 Project Organization Chart

The project organization chart (Figure 4) provides the proposed implementation project structure. The blue-colored boxes indicate DHS and/or COMPONENT personnel. The yellow-colored boxes denote software implementation partner contractor personnel.

Figure 4: DHS ESIS Project Deployment Organization Structure



2.3 Roles and Responsibilities

Table 1 describes the primary roles and responsibilities of the ESIS project implementation participants.

Table 1. ESIS Direct Implementation Roles and Responsibilities

Role	Primary Responsibilities
Executive Sponsor/Program Manager	• The Executive Sponsor/Program Manager is the responsible person who, with significant discretionary authority, is uniquely empowered to approve the program's scope of work, life cycle cost, schedule, and performance acceptability levels. The Executive Program Manager will: o Act as the sponsor of the ESIS and ensure that the ESIS is successfully implemented. o Provide/Coordinate funding acquisition. o Coordinate the writing of the ESIS use policy to be signed by top DHS management. o Brief top DHS management on the ESIS's implementation and sustainment.
DHS ESIS Project Manager	The DHS ESIS Project Manager: • Works for the Executive Sponsor and manages the ESIS Implementation Project. The Project Manager acts as the primary operational point of contact for the day-to-day ESIS implementation and sustainment activities. • Is responsible for managing the ESIS project team, completing the documentation set, presenting the business case and status of the project through all phases of the review and approval process, scheduling and coordinating the SELC stage reviews, and managing the performance of the project throughout the life cycle. • Ensures that the ESIS project is completed on time and on budget. • Regularly meets with and reports progress to Executive Sponsor and other DHS management. • Reviews and approves key project documents. • Ensures that the software partner conforms to contractual obligations, including the accomplishment of tasks within budget and allotted timeframes.
DHS ESIS Project Coordinator	The DHS ESIS Project Coordinator: • Assists the DHS ESIS Project Manager with day-to-day management of the ESIS. • Liaises with the all project participants at a tactical level and facilitates the flow of information across the team.

Role	Primary Responsibilities
Software Partner Project Manager (Contractor)	• A contractor who reports to the DHS ESIS Project Manager to manage the day-to-day software implementation and sustainment activities of the ESIS. • Acts as the operational point of contact for the ESIS. • Manages, organizes, directs and controls the execution of software support activities and contractor staffing. • Oversees the work of the ESIS application developers, trainers and help desk personnel. • Assigns and reviews work of all software partner subordinates. • Writes key project implementation documents (e.g., Project Plan, Test Plan and Requirements Documents). • Regularly meets with the DHS ESIS Project Manager to review ongoing progress, issues and resolutions.
COMPONENT Environmental Managers	• Oversee COMPONENT-specific deployments. • Nominates or participate in Functional User Groups (FUGs). • Provide ongoing advisory feedback to the DHS ESIS Manager on COMPONENT-level ESIS implementation in addition to ongoing sustainment challenges and issues.
Functional User Group (FUG)	FUG members typically comprise end-users of the software. One- to- four users from each COMPONENT should participate as members in this group to provide input and feedback during the Systems Specifications Requirements and Design Phases. • FUG membership may include additional DHS HQ and COMPONENT environmental compliance Subject Matter Experts, but their role should be advisory. • The FUG would also be used during the actual Pilot and Full Deployments of the software, providing ongoing feedback and COMPONENT-specific insights, challenges and sharing best practices observed. • FUG meetings will be chaired by the DHS ESIS Project Manager who would work with the group to translate DHS ESIS mission requirements into solutions that can be met by the software.
Environmental Compliance Subject Matter Experts	• Provide ongoing module-specific input, advice and feedback to the DHS Software Project Manager and Software Partner Project Manager. • Participate in FUG meetings as advisors. • Review ESIS compliance outputs to make sure that they meet regulatory requirements.

Role	Primary Responsibilities
Software Partner Application Programmers (Contractor)	• Work for the Software Partner ESIS Manager to program the ESIS application and additional software components. • Conduct software module and system integration tests.
Software Partner Engineers and Architects (Contractor)	• Work for the Software Partner ESIS Manager to take design specifications and develop designs that will become the working components of the DHS ESIS. • Assists with software testing, debugging and refinements. • Provides technical direction to programmers.
Software Partner DBA (Contractor)	• Work for the Software Partner ESIS Manager to design and maintain the Oracle enterprise database(s).
Software Partner Systems Administrator (Contractor)	• Work for the Software Partner ESIS Manager to provide ongoing Systems Administration support.
Software Partner Configuration Management Specialist (Contractor)	• Work for the Software Partner ESIS Manager to provide start-up configuration management support.
Software Partner Training Specialists (Contractor)	• Work for the Software Partner ESIS Manager to provide software general user and administrator training.
DHS Quality Assurance Manager	• Design test plans and perform quality assurance software tests. • Independently verify that DHS and COMPONENT-specific requirements listed in the Specifications Design documents are met.
DHS Software End User	• These are the typical software end users who will use the ESIS to manage day-to-day environmental compliance and sustainment tasks. • Provide software usability and utility feedback through respective FUG representatives.
Software Partner Help Desk Support (Contractor)	• Work for the Software Partner ESIS Manager to provide hotline technical support.

2.4 ESIS Implementation Plan Tasks

Table 2 provides a description of the major tasks required to implement the ESIS. The duration column lists the sequential set of months after notice-to-proceed authorization is received.

It is expected that a detailed Microsoft Project Tracking GANTT chart will be produced and maintained at the next phase of the ESIS implementation phase that will include resources, milestones and assigned personnel for tasks and subtasks.

Table 2. ESIS Implementation Plan Tasks

Task	Activity	Sequential Months (Time to complete task in months)	Description
1	ESIS sponsor communicates the vision for the ESIS and secures COMPONENT buy-in	1 (1 month)	• Refine and communicate the ESIS vision and benefits to planned ESIS stakeholders. • Coordinate the development and issue of the DHS ESIS Use Policy. • Formalize the established ESIS organization structure within the policy.
2	DHS ESIS Manager and Partner Software Manager Start-Up Activities	1 - 3 (3 months)	• Conduct kick-off activities (kick-off meetings). • Finalize the Project Implementation Plan Tracking GANTT Chart • Finalize the organizational setup chart and identify personnel with points of contact information.
3	ESIS sponsor secures project approval and funding	3 (1 month)	• Complete the project approval and funding acquisition process.
4	Engage Software Partner Solution Vendor(s)	2 (1 month)	• Select the best software technology partner(s) to deploy the proposed ESIS. • Produce a Project Management Plan (PMP)
5	Functional User Group (FUG) creation	2 (1 month)	• Establish the FUG which will be the primary team charged with supporting the development, implementation and sustainment of the ESIS.
	STAGE REVIEWS :: SOLUTION ENGINEERING AND SOFTWARE PARTNER PROJECT PLAN		
6	Software System Requirements Specification (SyRS) Definition	3 to 4 (2 months)	• Produce a Functional Requirements Document (FRD) to define the technical and operational requirements for the software (include functional use cases). The Technology Partner will work with the FUG to outline the required features and functionality of the proposed ESIS. • List functional requirements for each proposed ESIS module. • Include a Requirements Traceability Matrix (RTM). • Produce a Systems Design Document.
	STAGE REVIEW :: REQUIREMENTS DEFINITION		

7	Software Design Phase	5 to 8 (4 months)	• Design the ESIS modules taking into account the approved software requirements specifications. • Produce an IT Project Tailoring Plan. • Produce a Quality Assurance Plan. • Produce a Section 508 Electronic and Information Technology Accessibility Plan.
	STAGE REVIEW :: DESIGN		
8	Setup Data Center and Install Software	7 to 8 (2 months)	• Produce a Configuration Management Plan. • Set up the hardware and software inside the DHS data center and network environment.
9	Perform Software Functional Tests	7 to 9 (3 months)	• Produce a Developmental Test Plan. • Conduct a series of tests with the installed version of the software to make sure that its functions work within the DHS network environment.
10	Perform Software Stress Tests	8 to 9 (2 months)	• Conduct system stress tests. Before planning to 'go live' with a pilot and full implementations, stress test the software to make sure that it can meet the anticipated workloads and typical user demands.
11	Create a Legacy Data Import Plan (LDIP)	7 to 8 (2 months)	• Produce a Data Management Plan. • Create the LDIP which will provide guidance on how legacy documents and data will be imported into the ESIS. o The LDIP will describe how legacy data in existing DHS systems will be uploaded into the new system. o The LDIP will also outline the acceptable formats and templates to be used for data transfer. o Each module will have a detailed listing of data to be extracted from legacy systems and imported into the ESIS. o The Legacy imports will be conducted in phases with pre-determined cut-off dates defining when all the data is required to be in the ESIS.
12	Identify two (2) Pilot (Test Case) Organizations	7 to 8 (2 months)	• Identify two COMPONENTS to serve as pilot organizations to trial the new software. It is expected that one of the pilot organizations will be small and the second pilot organization will be large. • The pilot software deployments will not just be small-scale early releases of the ESIS. The pilot implementations will test all of the key features, design elements and functionality of the ESIS (as developed up to that point). • Any short comings identified during this pilot phase will be rectified as part of Task 15. • Develop Systems Acceptance Test Procedures.
13	Import Legacy Information for the Pilot Implementations	9 to 10 (2 months)	• Import legacy data and documents for the pilot COMPONENTs.
14	Train Pilot Users	10 to 11 (2 months)	• Produce a Training Plan. • Train DHS-HQ personnel that will use the software. • Train ESIS pilot COMPONENT local administrators. • Train ESIS pilot COMPONENT end users

15	Deploy Pilot Implementations	11 to 12 (2 months)	• Deploy the ESIS to 2 pilot organizations (Go-Live).
	STAGE REVIEW :: TEST READINESS REVIEW		
16	Fine-tune the ESIS based on Pilot Implementations and Feedback	13 (1 month)	• Produce Pilot Results Report. • Develop fixes and updates that result from the pilot implementation feedback.
17	Prepare DHS IT and Operations Management for Full Deployment	14 (1 month)	• Prepare the DHS IT support and operations management for a full deployment of the ESIS for all of the COMPONENTS.
18	Create a Master Deployment Schedule for Full Implementation	14 (1 month)	• Create the master deployment schedule for the COMPONENTS with deployment training dates and locations for the training included. • Obtain DHS IT Authority to Operate (ATO) Letter.
19	Import Legacy Data and Documents for the Full Implementation	14 to 15 (2 months)	• Import available legacy data for all the COMPONENTS.
	STAGE REVIEW :: PRODUCTION AND OPERATIONAL READINESS REVIEW		
20	Train COMPONENT Users	16 to 17 (2 months)	• Train ESIS pilot COMPONENT local administrators. • Provide User Manuals • Train ESIS pilot COMPONENT end users.
21	Fine-tune ESIS based on Full Implementation Feedback	18 to 19 (2 months)	• Program fixes and updates that result from the implementations. • Resolve outstanding issues.
	STAGE REVIEW : POST IMPLEMENTATION REVIEW		
22	Establish Post-Deployment Support	20 (1 month)	• Establish the Post Deployment support procedures for resolving ongoing issues.
23	Finalize Change Management Procedures	20 (1 month)	• Meet with the FUG to finalize change management procedures for future improvements and updates. • Develop Help Desk Maintenance Manuals.
24	Provide Ongoing Help Desk and Functional Support	20 +	• Conduct ongoing monitoring activities to make sure that the software is meeting DHS's requirements. • Provide ongoing help desk support for the ESIS. • Generate Monthly Incident/Issues Report. • Provide Quarterly Performance Reports.
	STAGE PLANNING :: DISPOSITION (SUNSET) PLANNING		

2.5 ESIS Implementation Acquisition Funding and Approval Steps

In addition to the BCA and IP preparation, an Information Technology acquisition approval process will take place to obtain the required funding to implement the planned ESIS.

Based on the anticipated funding requirements outlined in the Business Case Analysis, the ESIS will be categorized as a 'Level 3 Non-Major' project for funding acquisition purposes. At this level of categorization, a less stringent series of steps will be needed to secure overall approval from the DHS Chief Information Officer.

2.6 ESIS Project Roll-Out Plan and Life Cycle

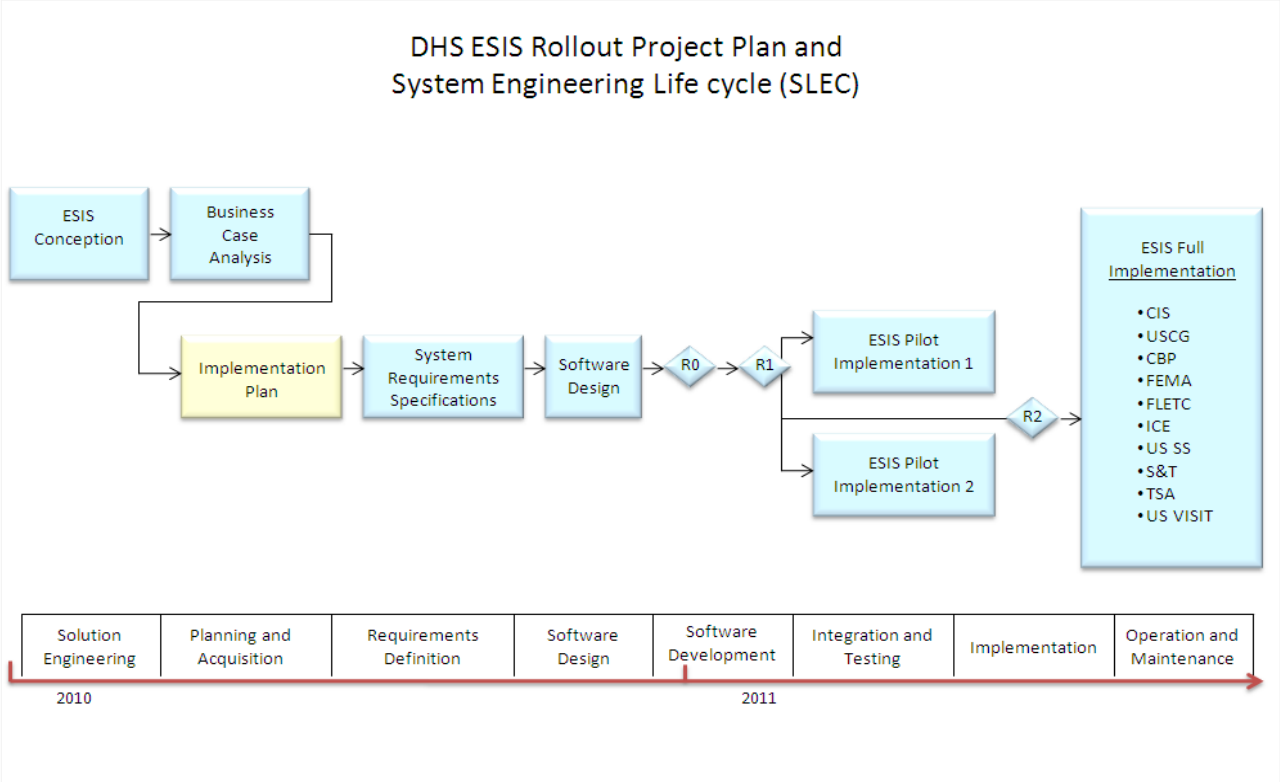
Figure 5 provides a Process Road Map of the ESIS phased implementation. It should be noted that some of the implementation phases overlap.

The plan activities begin with the ESIS conception and go to the software design phase before the pilot implementations begin.

R0 denotes the Initial Release of the software which will be tested by the software partner within the DHS network. R1 is the Pilot Release which is a low risk release aimed at testing the software with actual users to prove that it works.R2 is the Second Release aimed at scaling up the ESIS software platform for use by a full user base of all the COMPONENTS.

Following full implementation, steady-state maintenance operations will begin.

Figure 5: DHS ESIS Project Rollout Plan and System Engineering Life Cycle



Section 3. ESIS Implementation Support

This section describes the software, equipment, facilities, personnel and deployment training required for implementation of the ESIS.

3.1 ESIS Implementation Hardware, Software, Facilities and Materials

Table 3 outlines the hardware, software and facilities required to implement the ESIS.

Table 3 Hardware, Software, Facilities and Materials

Hardware	• Microsoft Internet Information Web Server • Oracle Database Server • ESIS Application Server • Routers • Firewall • Additional Hard Drives (as needed to accommodate additional storage space requirements)
Software	• Microsoft Internet Information Server and Windows Server Operating System • Oracle 10g database (Enterprise License) • Microsoft ASP.NET code environment
Facilities	• DHS-HQ server farm access with appropriate physical workspace for the ESIS database and application servers. • Classroom space for training for the Pilot and Full Implementation Phases. • Office space for help desk and project implementation and sustainment support.

3.2 Implementation Training

The following section outlines the training requirements to successfully deploy the ESIS.

- Training Goal – The goal of the implementation training would be to train the typical users of the ESIS and the administrators of the system.
- Training Objectives – Software users would be trained on how to use the available ESIS modules. COMPONENTs may choose not to utilize all the available modules, and so training will be tailored to meet this need. COMPONENT software administrators would be trained on how to administer the software (e.g., add COMPONENT users, archive data and documents).
- Training Method – Training would be conducted in training rooms containing computers. General User Training will last for 5 days, and Administrator training will be accomplished in 5 days. Administrators will be required to complete General User Training as a prerequisite to taking the Administrator Training.

- Manuals – User Manuals will be provided to trainees. Administrator Manuals will also be provided to trainees assigned to be COMPONENT local administrators.

3.3 DHS Resource Staffing Plan

This section describes the DHS Resource Staffing Plan for the ESIS.

3.3.1 Resource Profiles

The ESIS will require the need for a DHS ESIS Project Manager assisted by a DHS ESIS Project Coordinator.

3.3.2 DHS Resource Details

Table 4. DHS Resource Requirements

Resource	Costs	Hours/Year	Availability	Skill Set
DHS ESIS Project Manager (Senior Staff Level)	Undetermined	1,020 - 2080	Variable	ESIS Project Manager
DHS ESIS Project Coordinator (Mid Staff Level)	Undetermined	2,080	100%	ESIS Coordinator

Table 5 summarizes the direct DHS labor resources needed to support the implementation of the ESIS.

Table 5. DHS ESIS Resource Staffing Anticipated Hours per Year Requirement

DHS ESIS Labor Resource	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8
Project Manager (Hours/Year)	2,080	2,080	2,080	2,080	1040	1040	1040	1040
Project Coordinator (Hours/Year)	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080

The hours in Table 5 exclude the proposed contractor software support which is outlined in the Business Case Analysis and associated cost estimates.

3.4 Performance Monitoring and Service-Level Requirements

Several performance metrics would be used during the start-up phase of the ESIS deployment to ensure that the ESIS performance meets the Department's specification requirements. Additional monitoring would be conducted during the 'Go-Live' phase to test that users are able to access the ESIS without any significant lag times.

Initial performance level requirements will include the following:

- The application will be available to users during daylight working hours across the United States.
- Server uptime will exceed 99 percent.
- Procedures will be established for communicating network downtimes and for notifying users when a planned software downtime event is to take place.

3.5 Disaster Recovery

The ESIS servers will be backed up incrementally every night.

A full back up will be done once-per-week in accordance with DHS IT disaster recovery requirements.

Every 3 months, laser disk copies will be made of the application and database server files and stored at an off-site location.

Table 6. ESIS IT Maintenance, Backup and Disaster Recovery Procedures

IT Events	Actions
Scheduled Maintenance Outages	The last weekend of every month will be reserved for application and database operations. Any planned outages will last no more than 8 hours starting Friday evening.
System Backups	Full backups will be run during weekends, with incremental backups performed every evening during the week. Up to sixteen week's worth of backups will be maintained on tape and transferred to laser disks every three months.
Failover Procedures	All application sessions should fail over to available Oracle nodes in the event of a single-node failure. In event of a localized disaster in which all Oracle nodes are unavailable, the local standby environments should come online within 6 hours.
Disaster Recovery Procedures	In the event of a site-wide disaster, the off-site standby environment will be brought online within 6 hours.
System Accessibility	The system would support current DHS loads within the available network bandwidth. If the Department's network is constrained, over burdened or throttled, access to the ESIS may be impacted.

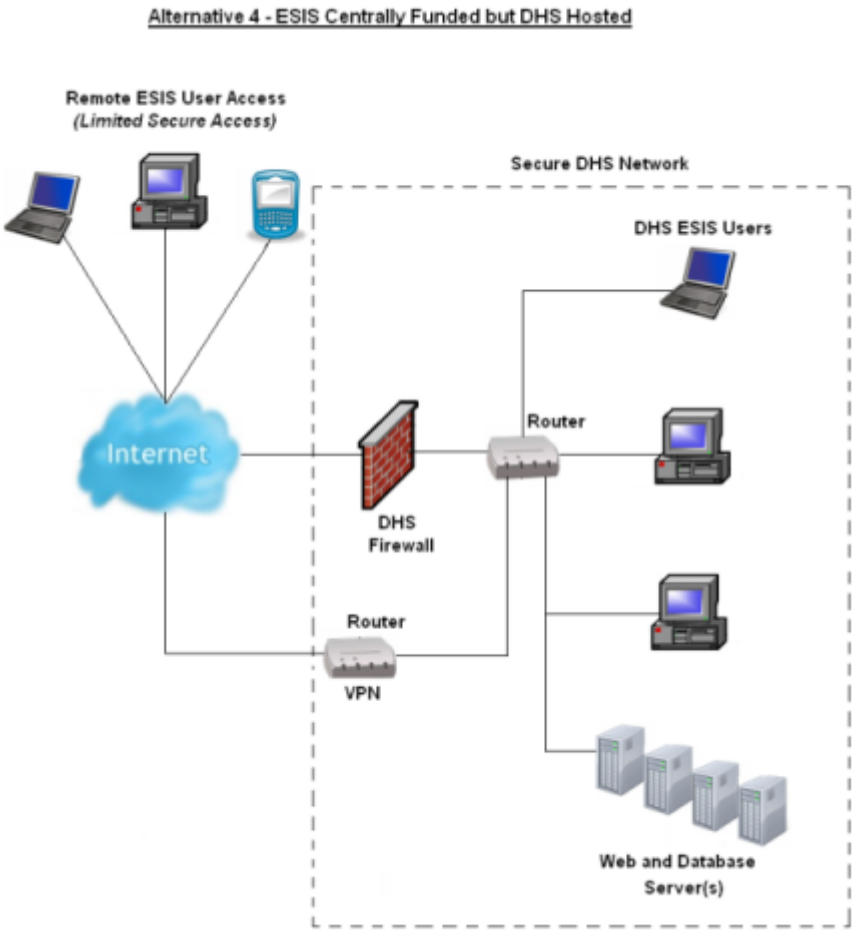
Section 4. ESIS Implementation Requirements by Organization

The following is an outline of ESIS implementation requirements for DHS HQ and the COMPONENTS.

4.1 DHS HQ ESIS Implementation Requirements

The ESIS will include the overarching IT network environment requirements shown in Figure 6.

Figure 6: DHS ESIS Recommended Alternative (from Business Case Analysis)



4.2 COMPONENT Implementation Requirements.

It is recognized that DHS COMPONENT organization implementation requirements are expected to differ from COMPONENT to COMPONENT. Each COMPONENT will decide which ESIS tools to use based on their specific compliance and sustainability needs.

DHS-HQ, however, may mandate the use of specific modules to assure environmental compliance or other upper-level management level objectives.

Table 7 summarizes the variable options available to COMPONENTS to use the different software modules that will depend on their specific environmental compliance and sustainability requirements.

The IP will be modified in the future to reflect the variable levels of use of each ESIS module by each COMPONENT.

Table 7. COMPONENT Use of ESIS Software Modules

Tool/Module	Required Use By	Optional Use By
Sustainability Portal	All COMPONENTS	
ISO 14001 EMS	All COMPONENTS with appropriate facilities (EMSs may be site-based or organization-based).	Other COMPONENTS
Compliance Auditing	All COMPONENTS	
Compliance Requirements Portal		COMPONENTS
Tank Management	All COMPONENTS that have regulated USTs and ASTs included in SPCCs.	Other COMPONENTS
Cultural, Archaeological and Historical Resources Management	All COMPONENTS that have Cultural or Historical Resources that require going through Categorical Exclusion (CATEX) process.	Other COMPONENTS
Hazardous Materials Management	All COMPONENTS that have regulated EPCRA Tier II and/or TRI reporting requirements.	Other COMPONENTS
Hazardous Waste Management	All COMPONENTS with regulated RCRA Waste in excess of 1,000 pounds.	Other COMPONENTS
Air Management	All COMPONENTS that have a regulated Title	Other COMPONENTS

	V permit.	
Water Management	All COMPONENTS that have regulated NPDES or SPDES permits.	Other COMPONENTS
Environmental Compliance Training	All COMPONENTS for specific training.	Other COMPONENTS
Asbestos Management Module	All COMPONENTS that have a large number of ACMs and associated risks.	Other COMPONENTS
Green House Gas Emissions Management	All COMPONENTS that have regulated GHG reporting and management requirements.	Available to all COMPONENTS
PCB and ODS Management		Available to all COMPONENTS

Section 5. Managing Software Changes and Issue Management

The following section outlines the process for tracking all proposed changes to the software, including how change requests will be initiated, logged, tracked and reported.

5.1 Managing ESIS Software Change or Update Requests

A formal process will need to be developed to address changing circumstances and requirements during the post deployment phase. Such changes may include new environmental regulations and associated requirements or changes within DHS that may need to be reflected in the software's setup.

There may also be benefits from technology improvements that can serve to improve the system.

ESIS software change requests will be initiated by using a Software Change Request (SCR) form. The form will be logged electronically and submitted for approval by the DHS ESIS Project Manager. The DHS ESIS Project Manager will consult the FUG before approving, rejecting, or putting any change requests on hold.

If change requests are not implemented, a procedure may be put in place to escalate the requested change to a higher level executive within the DHS ESIS organizational team for consideration and/or adjudication.

5.2 Additional Project Controls with Budgetary Impacts

Additional processes may be implemented to formalize any requested changes to the ESIS project scope and schedule that could affect the budget. Major changes that require additional funding will be passed on to top management by the DHS ESIS Project Manager. A formal process for funded scope changes would be instituted and documented.

5.3 Issue Management

All software issues that are identified during the implementation of the ESIS, and for as long as the software is in use will be logged into the ESIS Software Support Database.

The Software Partner Project Manager will review and prioritize all issues and assign appropriate Help Desk support individuals to resolve them.

Monthly issue reports generated from the support database will be provided to the DHS ESIS Project Manager.

Once resolved, issues will be archived for future reference.

Escalation procedures would also be established to address unresolved issues or issues that have been unsatisfactorily addressed.

5.4 Issue Status Reporting

Two quarterly reports will be prepared to summarize the monitoring and control functions of the ESIS implementation project.

1 Change Control Report – Will summarize all the requested changes and the status of their implementation.

2 Issue Management Report – Will summarize all the requested issues and the status of their resolution.

Both reports will be automatically generated by the support database application.

Section 6. ESIS Implementation Quality Management

This section describes the overall quality objectives for this project. The quality objectives stated below may be superseded by established DHS IT Quality Objectives.

6.1 Quality Standards

All of the proposed modules will go through a quality review process managed by the DHS ESIS quality manager to make sure that the software meets the functionality and usability requirements developed by the FUG and approved by top DHS management.

Section 7. Software Partner Performance Reviews

On a quarterly basis, Software Partner ESIS software project reviews will be conducted to make sure that the ESIS implementation is being efficiently deployed and sustained.

A quarterly project review report will include a discussion of the following progress items:

- Scope Status.
- Schedule Status.
- Budget Status and Cost Control.
- Problems and Corrective Measures.
- Outstanding Items and Resolution of Non-conformances.
- Anticipated Resource Problems.
- Success Stories, Lessons Learned, Cost Savings.
- Status of Subcontractor Support.
- Invoicing.

Appendix 1 – Terminology

The table below defines the major terms used in this document.

Term	Description
Change Management	Activities involved associated with (1) defining or implementing new values, attitudes, norms, and behaviors within an organization that usually support new ways of doing work and overcome resistance to change; (2) building consensus among stakeholders on specific changes designed to better meet their needs; and (3) planning, testing, and implementing all aspects of a transition from one organizational structure or business process to another.
Data Center	A facility used for housing a large amount of electronic equipment, typically computers and communications equipment.
Data Center Requirements	Requirements for the Data Center used to host the enterprise system, i.e., physical power requirements, rack setup and network infrastructure requirements.
Disaster Recovery Requirement	Requirement that focuses on restoring a system from a downtime state that lasts many hours to days or even weeks.
DRMO	Defense Reutilization and Marketing Organization
Functional Test Case	A set of conditions or variables under which a software tester will determine if a certain business process works.
High Availability Requirement	Requirements that describe the amount of time that the system needs to be available to satisfy the needs of the users. An example would be a 98% server uptime requirement which means that a software application must be available 98% of the time.
Operations Manual	The collection of system documentation outlining the day-to-day and other regularly scheduled operational tasks and checklists.
Solution Stack	Set of software subsystems or components needed to deliver a fully functional solution.
Stress Test Plan	A test plan focused on determining the stability of a software system. The plan normally involves testing software capability beyond normal operational capacity to even breaking point to observe results. An example exercise would be: what is the number of users that can access a database before its performance degrades significantly leading to prolonged access times or even failure.
Testing Plan	A detail of how the test will proceed, who will do the testing, what will be tested, in how much time the test will take place, and to what quality level the test will be performed.
Training	The acquisition of knowledge, skills, and attitudes as a result of the teaching of vocational or practical skills and knowledge that relates to specific useful skills.
TSDF	Treatment, Storage and Disposal Facility