Office of the Chief Information Officer
Strategic Information Technology Plan
FY 2004 – FY 2009

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EXECUTIVE SUMMARY

The mission of the Office of the Chief Information Officer (OCIO), in support of the U.S. Patent and Trademark Office (USPTO), is *to provide quality information products and services for our customers*. In support of that mission, the Strategic Information Technology Plan links the OCIO's goals and objectives to the USPTO's 21st Century Strategic Plan to assure that the OCIO meets customer business needs using agile, productive, and innovative approaches. Additionally, the Strategic Information Technology Plan supports the USPTO's efforts to comply with the government-wide initiatives in the President's Management Agenda.

The **Introduction** to the Strategic Information Technology Plan provides a general view of the OCIO's mission, vision, and principles and how they position the USPTO to face key challenges, including the move to the new Alexandria Headquarters, the growth in patent and trademark applications, increased business dependency on information technology, an increasingly remote workforce, and the need for international coordination. This section also provides an overview of the accomplishments to date and how the OCIO will build on these achievements in the future.

The **Strategic Goals and Objectives** sections describe the five strategic goals along with the specific objectives and tasks that support each of them. Goal 1, *Enable the USPTO to implement electronic government in its patent and trademark business areas to reduce paper handling and enhance business processes,* provides a focus for the development of innovative and agile services. Goal 2, *Support the relocation of the USPTO to the new Headquarters in Alexandria, Virginia,* addresses the OCIO's challenge to sustain high quality service during the move to Alexandria Headquarters. Goals 3, 4 and 5 summarize the OCIO's commitment to operational excellence and to a clear linkage between business processes and technology. Goal 3 is to *Provide and support a world-class information technology operation that meets or exceeds end-user needs.* Goal 4 is to *Leverage enterprise architecture to improve information technology efficiency, effectiveness, and quality,* simplifying and unifying through initiatives such as high availability architecture. Goal 5 is to *continuously improve the delivery of OCIO information products and services to meet USPTO business objectives.*

The OCIO strategic goals represent a five-year blueprint for implementing USPTO's information technology that supports its mission. The **Conclusion** summarizes a longer-term vision of the USPTO as those plans come to fruition. By 2009, the OCIO's internal and external customers will interface with a quality-focused, highly productive, responsive organization meeting and exceeding customer requirements through continuous improvement of products and services. Initiatives in support of electronic government (e-Government) will have reduced reliance upon, and in some cases eliminated, inefficient paper processes. Electronic communication of applications and documents with applicants will occur seamlessly, facilitated by an integrated customer-facing government-to-business and government-to-citizen electronic government approach that brings the USPTO closer to its customers and stakeholders.

INTRODUCTION

The mission of the U.S. Patent and Trademark Office (USPTO) is to ensure that the intellectual property system contributes to a strong global economy, encourages investment in innovation, and fosters entrepreneurial spirit. The intellectual property climate is fast moving, complex, and increasingly international in nature. To meet these challenges, the USPTO's Office of the Chief Information Officer (OCIO) has developed the Strategic Information Technology Plan (SITP) broadly focused on the themes set forth in the USPTO's 21st Century Strategic Plan – agility, capability, and productivity. In order to support the USPTO's 21st Century Strategic Plan, the OCIO, like the USPTO, must transform itself into *a quality-focused, highly productive, responsive organization supporting a market-driven intellectual property syste*m.

The USPTO recognizes that its products and services help to drive technological advancement, an engine of the economy. Patent rights provide their owners, corporate and individual, a powerful incentive for making substantial investments in research and development and for accepting the significant risks inherent in starting new businesses. Registering trademarks and disseminating trademark information allows trademark owners to market products under protected names, thereby decreasing confusion for consumers and increasing equity for companies. Information contained in patents and trademarks represents an extraordinary collection of technological and business resources, much of which is not available from other sources. Dissemination of this data allows researchers to understand and build on new technologies disclosed through the patent process and encourages the incorporation of patented inventions into commercially manufactured products. Every week, tens of thousands of individuals make economically significant decisions based on the information disclosed in patents and trademark records. The USPTO is pursuing a strategic plan that supports economic growth by improving the delivery of intellectual property services that meet the business needs of internal and external customers, in part, with increased technological capabilities.

A key purpose of this SITP is to tightly couple the OCIO's goals and objectives to the USPTO's strategic vision to assure that the OCIO meets customer business needs using agile, productive, and innovative approaches. This is a world in which market forces drive the OCIO's strategy via workforce management and a commitment to internal and external customers backed by service level agreements and service goals. Quality and cost control are achieved by the simplification and unification of processes and technology. A rigorous capital investment planning approach is used, and operations are executed based on a business model that utilizes balanced scorecard performance management. As a result, the OCIO will support the USPTO in transforming itself into a quality-focused, highly productive, responsive organization supporting a market-driven intellectual property system.

INFORMATION TECHNOLOGY AND THE USPTO'S 21ST CENTURY STRATEGIC PLAN

The OCIO's SITP focuses on the themes set forth in the USPTO's 21st Century Strategic Plan and addresses the areas in which information technology will play either a primary or enabling role in carrying out the mission and vision for the USPTO.

Agility: Address the 21st Century Economy by Becoming a More Agile Organization
The OCIO will directly enable the USPTO to become a more agile organization, particularly through IT transformation services that are founded on a flexible enterprise architecture for application processing. These e-Government initiatives as a whole will provide secure and robust electronic end-to-end processing of both patents and trademarks. The OCIO will also play a major enabling role for flexible workforce environments by providing the necessary infrastructure and connectivity to key USPTO systems. Through technology sharing and joint development efforts, the OCIO will support the strategic effort to strengthen and simplify access to intellectual property rights around the world through international cooperation and electronic information dissemination.

Capability: Enhance Quality through Workforce and Process Improvements
As core competency needs to evolve due to increased reliance on information technology and the outsourcing of services, as well as eventual workforce retirements, the federal government is placing greater emphasis on the need to recruit, retain, and train the right people. This is also true for the USPTO. In response, the OCIO will support this evolving workforce by providing an advanced infrastructure and tools that support hiring and development. The OCIO will continue to address quality through workforce and process improvements, such as improving life cycle management within the OCIO and enhancing architecture to promote a high return on investments in information technology.

Productivity: Accelerate Processing Times through Focused Examination
By using advanced information technology tools for internal and external customers, the OCIO will support increased productivity. The e-Government initiatives, as defined in the USPTO's 21st Century Strategic Plan, will be instrumental in reducing latency in the patent and trademark application pipeline, thereby helping to achieve the USPTO's ambitious business goal of reduced pendency.

OCIO MISSION, VISION, AND PRINCIPLES

The OCIO mission is *To provide quality information products and services for our customers*. In support of that mission, the OCIO pursues a clear vision: *We deliver information excellence that fuels the economy*. Our principles of *Commitment to Our Values*, *Simplification,* and *Results Oriented*, detailed below, are embedded in the activities that we perform in carrying out our mission.

Commitment to Our Values – The OCIO is committed to its values and seeks to continue to incorporate them into the culture of the organization. The OCIO values include the following.

- *Valuing Employees* – We support our employees' need to balance their personal and professional aspirations. We treat each other with dignity, respecting individual and cultural differences. We communicate frequently and with candor, listening to each other regardless of level or position.
- *Teamwork* – We are committed to working together and communicating with one another to live the mission and achieve the vision.

- *Integrity* – We are honest and ethical in all that we do. We keep our promises and learn from our mistakes.
- *Responsiveness* – We do what needs to be done and when it needs to be done.
- *Quality* – We focus on improving our process, products and services.

Simplification – The OCIO will seek to consolidate its systems and processes through a streamlined enterprise architecture, revised life cycle management procedures for system development, enhanced world-class operations of information technology resources, and rigorous capital planning and investment control procedures and governance that will help identify project priorities and retire obsolete systems.

Results-Oriented – The OCIO will focus on results by understanding how information technology impacts business drivers, measuring the performance through a balanced scorecard model aligned with the USPTO's performance goals and measures, and managing the performance to meet service level agreements, service goals, and the overall agency goals. The OCIO is building a workforce program to improve management skills, provide adequate skills management, and instill performance management best practices.

CHALLENGES AND KEY DRIVERS FACING THE USPTO

The USPTO faces a number of significant challenges in carrying out its mission. The major challenges and key drivers are summarized below.

Move to New Headquarters – The Alexandria Headquarters move presents significant information technology challenges as the move must appear as seamless as possible from a systems and infrastructure perspective to internal and external users of USPTO information technology. The move will occur incrementally for more than a year, requiring concurrent systems operations and access at both sites over that period.

Growth in Patent and Trademark Applications and Storage Requirements – The USPTO stores 30 million gigabytes of data, an amount that continues to rise steadily. Currently, the agency receives annually over 325,000 patent applications, some of which can run to millions of printed pages, and more than 250,000 trademark applications. The number of applications has been steadily increasing, averaging around 5 percent annually. As a result, the USPTO has seen storage needs grow between 25 percent and 40 percent in each of the past five years. As the business model changes to rely on image files as the official document for application prosecution, more information will need to be processed electronically and the storage requirements will rise even faster.

Increased Business Dependency on Information Technology – As the USPTO transitions to end-to-end electronic processing of patent and trademark applications, the digital representation of files become the document of record. This adds another element of importance to the underlying systems that store and process this information. With this operating model, system down time can cause serious disruptions to business operations and be very costly to the USPTO. To minimize this potential impact, a highly available information technology infrastructure,

applications, and data are needed. In addition, security concerns such as privacy, data integrity, and non-repudiation of business transactions become critical to successfully executing end-to-end electronic application processing.

International Coordination – Due to the global scope of the intellectual property issues, the USPTO has made a strategic decision to coordinate with international intellectual property offices to support its customers and stakeholders. This is becoming more important as the economy becomes more global and intellectual property rights are increasingly established and defended internationally. The challenges include establishing data standards to promote electronic information sharing and aligning technology with evolving legal frameworks and business models. The USPTO will coordinate and facilitate the sharing of patent data among its global intellectual property office partners and the World Intellectual Property Organization to ensure consistency of standards and global interoperability of patent systems.

Increasingly Remote Workforce – The work-at-home initiatives and other flexible work schedules are causing the workforce to be increasingly remote and create further challenges in providing information technology infrastructure support. The primary issue is that much of the remote workforce requires access to complex applications across a wide area network. One of the greatest challenges to enhancing the work-at-home environment is that most applications used by participants must be accessed across the wide area network, as opposed to office access to applications through the faster local area network. Therefore, even the upgraded primary link provided cannot compensate for the decreased speed of data transmission provided across the wide area network. Even with high-bandwidth remote access, wide area network speeds can be as low as 10% of a local area network, which presents complications when running applications across a wide area network. In addition, issues such as security, access control, and end user support all become more difficult to manage as more users are operating outside the physical network.

Technology Obsolescence Cycles – The fast pace of information technology advancements often shortens the life cycle of systems, requiring updates that are more frequent. Examples of this include:

- Continuous software upgrades;
- Replacement of servers, desktops, network devices, and storage equipment to minimize total cost of ownership; and
- Continually training and retraining personnel to keep up with the rapid evolution of technology.

OVERVIEW OF STRATEGIC INFORMATION TECHNOLOGY PLAN FRAMEWORK

The OCIO has identified the following goals as the major strategic directions to support the information technology vision for the USPTO. The OCIO has also identified the objectives and specific tasks necessary to implement each of these goals listed below in order of importance.

Goal 1 is to ***Enable the USPTO to implement electronic government in its patent and trademark business areas to reduce paper handling and enhance business processes***. E-Government is important to USPTO, not only because it has been federally mandated, but more importantly because it promises to bring USPTO closer to its customers and stakeholders and improve operational efficiency.

Goal 2 is to ***Support the relocation of the USPTO to the Headquarters in Alexandria, Virginia,*** by providing for the transition of information technology resources with continuous services to internal and external customers.

Goal 3 summarizes our commitment to operational excellence: ***Provide and support a world-class information technology operation that meets or exceeds end-user needs*** based on a balance between level of service and cost.

Goal 4 summarizes our strategic imperative to improve the linkage between business processes and technology: ***Leverage enterprise architecture to improve information technology efficiency, effectiveness***, ***and quality,*** simplifying and unifying through initiatives such as a high availability service architecture.

Goal 5 is to ***Continuously improve the delivery of OCIO information products and services to meet USPTO business objectives.*** This goal focuses on long-range improvements in execution of the OCIO operations.

ACHIEVEMENTS TOWARD THE STRATEGIC GOALS

Recently the OCIO has made significant achievements toward realizing the strategic goals outlined above. Many of these successes are described in the paragraphs below with an identification of the SITP goals that each one supports.

Migration to E-Government (supporting Goal 1) – The USPTO has been a leader in the federal government in providing customer service through the Internet, as evidenced by recent website awards. The USPTO received the E-Gov 2003 Explorer Award for ours efforts in complying with Section 508 requirements, the 2003 Computer World Laureate Award for technical leadership in implementing a progressive technology infrastructure that supports the business migration to electronic government, and the MARS Best Free Reference Websites of 2003. MARS is the American Library Association's Machine Assisted Reference Section of the Reference and User Services Association. In addition, the USPTO received the 2003 Interagency Resources Management Conference Team Award for the Trademark Postal system. This is an automated system that generates and sends bulk mail to the USPS Website for printing, stamping, and mailing trademark notices.

A key milestone has been the deployment of the Image File Wrapper system. As of June 2003, all newly filed patent applications at the USPTO are being converted to electronic applications and managed electronically. The Image File Wrapper will enable electronic processing of patent applications. In a major cooperative effort with the European Patent Office, the USPTO will

integrate Image File Wrapper and ePHOENIX, the system that is in use at the European Patent Office, to enable electronic processing of patent applications. The transition toward complete processing of patent applications electronically has provided the OCIO with a major opportunity to pursue collaborative information technology development with its Trilateral Partners, the European and the Japan Patent Offices. The Madrid Protocol Accession Documents were signed by the President in FY 2003 and was implemented simultaneously with the deployment of the electronic communication and data sharing components of the Trademark Information System that will enable electronic exchange with the World Intellectual Property Organization. The Madrid Protocol relates to the International Registration of Marks based on an international treaty that allows a trademark owner to seek registration in any of the countries that have joined the Madrid Protocol. The International Bureau of the World Intellectual Property Organization administers the international registration system. To support each of the businesses, the Revenue Accounting and Management system facilitates online payment of customer fees.

Patent E-Filing (supporting Goal 1) – The USPTO promotes electronic filing of patent applications in support of the e-Government initiative. A key component of electronic filing is the Electronic Filing System – Application Body eXtensible Markup Language (EFS-ABX) authoring tool. The new authoring tool allows users to create patent applications through Microsoft® Word template that is submitted over the Internet using the eXtensible Markup Language file. The author of the patent application creates a patent application specification in the new authoring tool format, based on the Annex F application-body Document Type Definition for submission. Other Annex F compliant electronic filing systems will also accept patent applications created by the new authoring tool.

The EFS-ABX authoring tool greatly improves the workflow of creating a patent specification over current authoring tools. Through the new authoring tool, the user can create and edit graphics using any software and format integrated with Microsoft® Word. The graphic conversion feature allows the user to develop the patent application specification as a single Microsoft® Word document. The authoring tool will enable the user to convert the Microsoft® Word document into a valid application-body eXtensible Markup Language file for transmission over the Internet. The new authoring tool can also print applications, which may be submitted to the USPTO by mail or freight. The EFS-ABX authoring tool is expected to be deployed in FY 2004.

Trademark Postal System (supporting Goal 1) – The Trademark Postal system was developed in partnership with the U.S. Postal Service to fully automate an e-Government system that generates and sends bulk mail to the USPS NetPost Website for printing, stamping, and mailing. The Trademark Postal system relieves the burden of printing and mailing notices from the USPTO and enables the United States Postal Service to generate and send customized postcard notices to the recipient. The Trademark Postal system incorporates eXtensible Markup Language batch file technology as the source of producing the postcards.

First Action System for Trademarks (supporting Goal 1) – This system, which was deployed in May 2003, enables trademark examiners to electronically retrieve and examine new trademark

application data from the Trademark Reporting and Monitoring system and the Trademark Image Capture and Retrieval System. Examiners can then reassign to other examiners, create validation reports, and perform first actions. It establishes a front-end tool for initial examiner actions on new trademark applications.

Trademark Image Capture and Retrieval System (supporting Goal 1) – A newer version of this system, which is designed to capture, store, retrieve and print digital images of Trademark application documents, was deployed to support the Trademark Information System, Madrid Protocol, and the Trademark Trial and Appeal Board Information System.

Trademark Trial and Appeal Board Vue (supporting Goal 1) – This system allows user to view on the Internet images of trademark documents relating to trademark disputes. The Trademark Trial and Appeal Board Vue is an application that serves both the Internet and Intranet users by allowing them to view information on Trademark Trial Appeal Board proceedings.

Electronic System for Trademark Trials and Appeals (supporting Goal 1) – This system is an electronic filing system that allows users to file a notice of opposition to registration against one or more applications online. It also accepts filings of requests for extensions of time to oppose and other papers related to the Trademark Trial and Appeal Board process. In addition, this system allows the Trademark Trial and Appeal Board to process these filings and notify filers via e-mail when they have been accepted.

Information Technology Security (supporting Goal 1) – USPTO has made substantial investments in assuring information systems, including the use of firewalls, public key infrastructure, and encryption on local network segments. The major ongoing information technology security programs include certification and accreditation of USPTO systems, compliance testing, capability self-assessments, infrastructure protection, operations and maintenance, and information technology security training. For example, the OCIO has made tremendous progress in the Certification and Accreditation Remediation effort. As of March 2004, all ten mission critical/classified systems have been granted full authority to operate. The authority to operate certifies that the information system meets documented security requirements based on legislative requirements and will continue to maintain the accredited security posture throughout the system life cycle. These program improvements have been designed to bring the USPTO into full compliance with the Federal Information Security Management Act.

Host-Based Intrusion Detection System, Information Technology Security (supporting Goal 1) – The USPTO is augmenting existing network intrusion detection with server monitoring. The Host-based Intrusion Detection System will provide automated, real-time intrusion protection and detection by analyzing events, host logs, and inbound and outbound network activity on critical USPTO enterprise servers to block malicious activity from damaging critical information technology assets. The Host-based Intrusion Detection System will monitor all traffic to and from the server or network to detect and prevent inbound attacks as well as block new and unknown outbound attacks. The Host-based Intrusion Detection System provides the flexibility

to detect and prevent both console and network-based attacks through log monitoring capabilities that detect malicious activity before it causes any damage.

Public Key Infrastructure/Smart Card, Information Technology Security (supporting Goal 1) – The USPTO is deploying Public Key Infrastructure /Smart Cards at the Alexandria Headquarters that coincides with the relocation of USPTO employees. The OCIO is leveraging relocation plans for physical access control by adding a Smart Card chip to support access control. The Public Key Infrastructure is compliant with the Federal Bridge and Federal Identity Credentialing Committee standards to enable trusted system access and third-party transactions as necessary.

OCIO Move to Alexandria Headquarters (*supporting Goal 2*) – The USPTO has completed Phase 1 of its move to its new Headquarters in Alexandria. As part of this phase, the OCIO has completed the design, development, installation, and testing of the necessary information technology infrastructure, which includes fiber connection, cable plant, data switches, and telecommunications. The OCIO also relocated desktops and peripheral equipment for over 2,100 employees to the new Alexandria Headquarters.

Section 508 Program (supporting Goal 3) – The USPTO has implemented an exemplary Section 508 program that has become a model for other government agencies. The General Services Administration, the federal agency responsible for educating federal employees regarding Section 508 implementation, is using USPTO's program as a guide for federal procurement officials participating in its nationwide Section 508 training programs. Section 508 is a legislative mandate that requires IT applications to be accessible to individuals with disabilities.

Enterprise Architecture (supporting Goal 4) – The USPTO Enterprise Architecture Development Environment was developed to support the USPTO's goal to implement an enterprise-wide approach to information technology development. The new development environment is managed by the Center of Excellence, whose focus is on providing technical leadership and knowledge, reuse management services, and recommendations for best practices to promote enterprise architecture. The new development environment provides an infrastructure of highly scalable, highly available, consolidated servers and development tools. Currently, the new development environment is hosting a total of fourteen projects. Eventually, most AIS projects will use the new development environment; with this shared resource, OCIO can deliver quality products more efficiently than with the traditional silo approach.

Rational Unified Process (supporting Goal 5) – This process expands on the traditional waterfall systems development model and supports an iterative development path for life cycle management. We initiated a pilot to train key personnel, evaluate our existing life cycle work products against Rational Unified Process work products and determine which aspects of Rational Unified Process are most essential and beneficial. The results will be used to define a life cycle that supports both development methods and employs the appropriate Rational Unified Process reviews and work products.

With these initial achievements as a foundation for USPTO's efforts to support economic growth by improving the delivery of intellectual property services, the OCIO is well positioned to meet the technical and organizational challenges it currently faces, and deliver on its strategic goals and objectives. In the long term, the strategic goals will come together to implement a vision of continuously improving operations supporting a comprehensive enterprise architecture. The result will be an OCIO that is a quality-focused, highly productive, responsive organization, supporting the USPTO's vision in the 21st Century Strategic Plan. This is an ambitious agenda requiring the focused energy and talents of the OCIO personnel, aligned toward achieving the strategic goals outlined in this plan.

STRATEGIC GOALS AND OBJECTIVES

The goals and objectives of the Office of the Chief Information Officer outlined in this Strategic Information Technology Plan describe the strategies employed by the U.S. Patent and Trademark Office to address 21st century business needs. These goals are as follows:

- Strategic Goal 1: Enable USPTO to implement electronic government in its patent and trademark business areas to reduce paper handling and enhance business processes.
- Strategic Goal 2: Support the relocation of the USPTO to the new headquarters campus in Alexandria, VA.
- Strategic Goal 3: Provide and support a world-class information technology operation that meets or exceeds end-user needs.
- Strategic Goal 4: Leverage an enterprise architecture to improve information technology efficiency, effectiveness, and quality.
- Strategic Goal 5: Continuously improve the delivery of OCIO information products and services to meet USPTO business objectives.

These goals and the supporting objectives are focused on enhancing business efficiency and effectiveness, as well as improving service and communication with internal and external end users.

STRATEGIC GOAL 1: ENABLE THE USPTO TO IMPLEMENT ELECTRONIC GOVERNMENT IN ITS PATENT AND TRADEMARK BUSINESS AREAS TO REDUCE PAPER HANDLING AND ENHANCE BUSINESS PROCESSES.

Strategic Goal 1 -
1.1. Develop a Trademark electronic file management system, including support for the Madrid Protocol, and Electronic Government operations [E-Government 1].
1.2. Deliver an operational system to process patent applications electronically [E-Government 2].
1.3. Encourage increased use of e-filing patent application authoring and application submission tools.
1.4. Establish an information technology security program for fully certifying and accrediting the security of every automated information system [E-Government 4].
1.5. Continue to enhance technology capabilities of automated information systems and infrastructure to provide external access to USPTO automated information systems in a secure, controlled manner.
1.6. Integrate automated information systems to support the electronic workflow of a post-grant document review process [E-Government 3].
1.7. Modernize financial management systems in accordance with E-Government initiative.

The workload of the USPTO has been growing steadily due to the increased number and complexity of applications and this trend is expected to continue in the future. In response, business processes must evolve from paper-based to e-Government interactions to be cost-effective and time-efficient for both internal and external users of information technology. Facilitating the transition to an e-Government environment is the top OCIO priority and includes the planning, design, development, maintenance, oversight, and management of web-based business applications. Implementing e-Government addresses the

technological needs of USPTO patent and trademark businesses, including all business areas touching patent and trademark applications, to facilitate decreased reliance on paper-based, physical processing and review of application file contents to streamline operations. As the USPTO enhances its e-Government systems, the OCIO will continue to provide a secure environment for conducting business with the USPTO and enhance technological capabilities to encourage alternative work arrangements.

Objective 1.1 Develop a trademark electronic file management system, including support for the Madrid Protocol and Electronic Government operations [E-Government 1].

The Trademarks business unit, supported by the OCIO, has been implementing e-Government systems and processes for the last 10 years as part of a business-reengineering plan aimed at moving away from paper-based processes. The move to full electronic operations will culminate in FY 2005 with deployment of the Trademark Information System. Recent successes include:

- Implementation and upgrade of the Trademark Electronic Application Submission (TEAS) system to facilitate online filing.
- Development of the First Action System for Trademarks (FAST) to automate the retrieval of new applications and the transactions taken by examiners during initial examination of trademark applications.
- Deployment of Trademark Assignments on the Web (eTAS), which allows external customers to search assignment historical records by either applicant and/or registrant name.
- Deployment of TTABVue that allows the public, members of the Trademark Trial Appeal Board (TTAB) and Trademark Examiners to view the TTAB proceedings folder, which contains images of the documents in the proceeding records.
- Implementation of the Electronic System for Trademark Trials and Appeals (ESTTA) that allows customers to file a notice of opposition to registration against one or more applications on-line, accepts filings of request for extensions of time to oppose and other papers related to the TTAB process, and allows the Board to process these filings and notify filers via e-mail when they have been accepted.
- Implementation and upgrade of the Trademark Image Capture and Retrieval System (TICRS) for electronic file wrappers.
- Electronic publication of the Official Gazette: Trademarks.

The Madrid Protocol has been implemented since November 2003 with the migration to Trademark e-Government. The Madrid Protocol will enable the trademark systems to exchange data with the International Bureau of the WIPO. The interface requires the completion of the Madrid International Trademark Electronic Application Submission system to facilitate text and image data exchange. The USPTO will deploy the Madrid International Trademark Electronic Application Submission (MiTEAS)system through phased implementation. The phased implementation will be concurrent with the completion of the Madrid International Trademark Electronic Application Submission application forms. This approach will ensure that the inbound and outbound transactions of the Trademark Madrid System will interface with other

trademark systems that are compliant with the Madrid Protocol. It is the USPTO's goal to leverage the Madrid-compliant e-filing capability to promote the sharing of the e-filing system with its global partners and to transform trademark transactions and operations entirely into an electronic environment.

In addition, the phased implementation of the Trademark Trial and Appeal Board Information System (TTABIS) will create an electronic workflow at the Trademark Trial and Appeal Board in compliance with the tracking, reporting, and communication requirements of the Madrid Protocol. Another tool that will improve workflow for the Trademark Trial Appeal Board is the First Action System for Trademarks. Version 2.0 of First Action System for Trademarks will provide actual integration of the components of the trademark application process with automated workflow that is consistent with the USPTO enterprise architecture.

The tasks that support this objective are as follows:

Tasks for Objective 1.1	Status
- Develop initial high-level architecture.	*Completed*
- Complete FAST 1.1 enhancements	*In Process*
- Complete FAST 1.2 Action Manager	*Planned*
- Complete FAST 2.0 planning and analysis, including validation of user requirements and updating of Detailed Design	*In Process*
- Complete coding, integration and testing of FAST 2.0 system	*Planned*
- Complete initial MiTEAS forms in current architectural environment	*In Process*
- Complete pilot test MiTEAS forms within an alternative architecture	*In Process*
- Decision on architectural environment for MiTEAS forms	*Planned*
- Complete the remaining MiTEAS forms	*Planned*
- Complete coding, integration, and testing of Madrid Transactions, including combinations	*In Process*
- Complete planning and analysis for TTABIS	*In Process*
- Complete coding integration, and testing of TTABIS	*Planned*

Objective 1.2 Deliver an operational system to process patent applications electronically [E-Government 2]

In order to realize inherent efficiencies in the digital world, both from a customer and internal USPTO operational perspective, delivering integrated patent systems and workflow tools is imperative. Delivery of services that supports electronic correspondence to and from customers promises significant benefits for customers and the USPTO. Enhancing the electronic processing options is an important step in building the e-Commerce highway at the USPTO. Future enhancements to the patent systems are predicated on the deployment of patent

processing systems that will enable USPTO to migrate to electronic file formats such as eXtensible Markup Language (XML). This file format will enhance processing and tracking capabilities for the USPTO and its customers.

The OCIO has begun to implement an end-to-end electronic pipeline for the processing of patent applications that will eliminate inefficient paper-based processes that is consistent with the e-processing strategy and the USPTO's 21st Century Strategic Plan. The Patent business unit, in coordination with the OCIO, has developed a phased implementation plan that will provide a base document management and work routing system to electronically manage patent application documents by September 2010. This plan will ensure an operational pipeline to capture and process patent applications electronically to improve the integration and workflow of patent processing applications. The integration efforts of systems will enhance key features, including formulation of reports, information transferring, scanning of documents and images, and technical support for the systems. Equally important are the workflow tools that will leverage XML technology, facilitate daily workflow tracking of patent applications, provide patent application status reporting, and other capabilities.

A key component of the integration and workflow approach is the Image File Wrapper (IFW). The IFW is an electronically stored image of the paper application file. The deployment of IFW includes the use of European Patent Office's (EPO) ePhoenix software. Implementing the IFW system is enabling the USPTO to pursue collaborative information technology development with the EPO. The IFW system stores images of file contents, which will be integrated with other systems to allow for electronic processing of patent applications, as well as provide image management technology and workflow capability. As deployment progresses, more examiners will be trained to use IFW desktop tools, messaging system, and desktop application navigator to view an examiner's docket and any application on their docket. While working on a case, examiners may print a working paper file consisting of selected parts of the application (*e.g.*, the specification, drawings, or most recent claim set.).

This initiative is important in managing file contents during the move to the Alexandria Headquarters facility (Strategic Goal 2). To facilitate the move, pending paper patent applications are captured in IFW. The patent applications in the IFW system serve as the office copy and legal record of the application since FY 2003, which increases file wrapper integrity, eliminates lost paper files, and eliminates the need to move paper files to the new campus. The electronic processing pipeline will be expanded to integrate (XML) and World Intellectual Property Organization (WIPO)-approved Document Type Definitions (DTDs) into the application processing chain, which will enhance system capabilities to provide end-to-end electronic processing of applications from authoring to filing to publication while ensuring global interoperability of the system. The IFW will be accessible by the Patent Enterprise Access Integration (PEAI) system. The PEAI will provide full content access within the IFW by USPTO personnel and customers. For instance, the Patent Enterprise Access Integration effort will integrate ePhoenix and IFW, and will support access to electronic file wrappers of published and granted patents. This initiative is a continuation in our collaboration with international partners, especially the EPO and the JPO. PEAI will allow the EPO and the JPO full access to the published and unpublished USPTO patent application documents, including Non-Patent

Literature (NPL) documents. The PEAI will also enable the exchange of priority documents for search and examination. In the future, it is envisioned that PEAI will be used by the Office of Public Records to fulfill requests for file histories, and will be publicly available via Public Search Facilities and the Patent and Trademark Depository Libraries. Other planned improvements include the scanning of documents in color, electronic exchange of documents and further integration with legacy systems such as the Patent Application Location Monitoring (PALM) system, the Revenue Accounting and Management (RAM) system, the electronic Desktop Application Navigator (eDAN) and the Patent Application Information Retrieval (PAIR) system.

The IFW system functionality will also increase customer access to patent information, including enabling applicants to file patent applications and other correspondence electronically. It also provides a means for examiners to send outgoing correspondence to applicants electronically, provides the public with secure access to IFWs via PAIR Internet Portal, and facilitates walk-up public access. The PAIR Internet portal will integrate with the IFW system to provide applicants access to their applications via the Internet. The USPTO customers will be able to access the status of their patent applications, the general public will be able to access existing patent information, and USPTO personnel and resource information will be made available on the Internet.

Important to patent operations is the search capabilities that enable USPTO and customers to access patent data in an efficient manner. The search functionality supports the way in which data is processed for viewing through prior art support. Prior art support features will provide needed functionalities, including acceleration of reviewing search results, implementation of Automated Routing Tool, ability to search patent application text, examiner access to translations of foreign patent documents, and other capabilities.

In addition, the next generation of patent processing systems is expected provide advancements which includes: (1) examiner access to text through eDAN; (2) delivery of images to publication contractor through electronic connection; (3) automated classification for initial routing; and (4) automated support of formalities review. Scanning, displaying, and printing patent applications in color may also be feasible. The next generation applications will maximize the utilization of tagged text for internal USPTO and external customer processing.

The tasks that support this objective are as follows:

Tasks for Objective 1.2	Status
- Complete deployment of IFW to all tech centers and Patent Business areas.	*In Process*
- Implement high availability of IFW infrastructure.	*In Process*
- Continue to integrate legacy systems to existing patent processing systems.	*Ongoing*
- Ensure that the IFW AIS's in production are operational, responsive, and aligned with business operations.	*In Process*
- Enhance soft-scanning capability of patent processing system.	*In Process*

Tasks for Objective 1.2	Status
- Monitor and document the changes that occur from deployment of IFW to the business processes at the Patent Office.	*Planned*
- Integrate Re-Examination Applications into the IFW business process.	*Planned*
- Enable patent examiners with improved access to patent information by enhancing eDAN.	*In Process*
- Ensure the migration of patent processing systems to fully support pdf and XML electronic formats.	*In Process*
- Develop PEAI to support access to electronic file wrappers of published patent applications and granted patents.	*In Process*
- Enhance PEAI to allow EPO and JPO full access to published and unpublished USPTO patent applications.	*Planned*
- Provide public access to all published application papers in the IFW system through Patent Enterprise Access Integration (PEAI).	*Planned*
- Provide electronic exchange of priority documents, search documents, and first action documents with the EPO through PEAI.	*Planned*
- Provide electronic accessibility to cited references to public application papers.	*Planned*
- Establish full XML processing of patent applications with PEAI.	*Planned*
- Develop replacement handling, monitoring, tracking, reporting, and processing functionalities in IFW based applications for post-allowance patent grant processing through PEAI.	*Planned*
- Integrate the re-examination applications into the mainstream of USPTO by replacing the Re-examination Processing System (REPS) with IFW. The integration is part of the PEAI effort.	*In Process*
- Replace Patent Cooperation Treaty Operations Workflow and Electronic Review (POWER) system and Patent Cooperation Treaty Operations Imaging System (POIS) with IFW.	*Planned*

Objective 1.3 Encourage increased use of e-filing patent application authoring and application submission tools.

It is critical that USPTO continue to move toward conducting business in a completely electronic environment. In order to increase the number of applications filed electronically, and gain greater user acceptance of electronic filing, the OCIO is implementing various initiatives predicated on the following e-filing strategy that will establish an electronic commerce (e-Commerce) patent filing system:

- The USPTO will develop and provide valuable electronic filing products to our customers through e-Commerce portal.
- Each proposed patents solution will result in an increase in electronic filings.
- XML and PDF formats remain the long-term strategy of the USPTO.

- Increase in electronic filings is a goal of the USPTO to the extent that measurable benefits can be achieved.
- Products offered by the USPTO will comply with the World International Property Organization (WIPO) Annex F Document Type Definitions (DTDs).
- USPTO operating expenses attributed to the processing of paper-filed applications will be reduced as significant numbers of electronic applications are filed.

Consistent with the above approach, the EFS-ABX is a major component of the USPTO patent e-filing system. EFS-ABX creates application-body XML files for new utility, provisional, Pre-Grant Publication (PGPub), and Patent Cooperation Treaty (PCT) submissions of Annex F based e-filing systems. By employing EFS-ABX, the USPTO will have taken advantage of technology advancements since Fall 2000, achieved Annex F compliance using the Application Body DTD, resolved outstanding ease-of-use issues, and strategically position XML for electronic patent filing. EFS and other patent e-filing systems will accept XML-tagged Portable Document Format (PDF) submissions. For the users, the EFS-ABX provides several improvements, including simplified image management, simplified client side workflow, ease of use, importation of previously created documents, and ease of installation. As the IFW is deployed and the EFS-ABX provides advancements, the patent filing process will need to transform into an entirely electronically driven process in which the applicants work on patent applications entirely online.

This effort will streamline the current process and allow the USPTO to take advantage of XML-based technology. The application body in the XML authoring tool is a new electronic patent application specification authoring-tool that utilizes Microsoft® Word. This feature will help to create patent applications consistent with the XML specifications. These XML documents can be submitted to the USPTO through an e-filing submission tool, ePAVE.

The patent application authoring and submission tools will be PCT compliant with the technical standard specified in PCT Administrative Instructions Part 7, Annex F, "Standard for the e-filing and Processing of International Applications." Future releases of the EFS will incorporate the electronic submission of follow-on papers (such as amendments) and provide the means for transmitting outgoing USPTO generated correspondence to applicants. An e-Commerce (eComm) portal is also envisioned in the future. The eComm portal will have additional capabilities to provide interactive support to the patent customers. It is expected that a higher quality and accurate application filing process will occur by moving toward an electronic environment, providing the impetus for increased use of patent software.

The next generation of patent filing systems is expected to perform single document integration of Office Actions, provide download functionality for Article 20 papers in IFW for applications entering National stage, process claim validation in Office Actions, and update forms paragraphs. The desired outcome is to provide the mechanisms for companies, independent inventors, patent practitioners, and other information exchange partners to file applications, make payments, record assignments of patents, exchange office actions and other correspondence, and

retrieve forms, publications, and other information from the USPTO with a minimum reliance on paper.

The tasks that support this objective are as follows:

Tasks for Objective 1.3	Status
- Enable EFS-ABX (XML Authoring Tool) submissions via ePave.	*Planned*
- Establish XML-Tagged PDF submissions via ePave.	*In Process*
- Deploy PatXML and PCT-Safe submissions via ePave.	*Planned*
- Expand capabilities of Electronic Filing System – Application Body eXtensible Markup Language (EFS-ABX) authoring tool.	*Planned*
- Establish the web as the primary delivery channel for customers by establishing a web-based electronic filing submission tool based on a true e-Commerce model.	*Planned*
- Retire Patent Application Specification Authoring Tool (PASAT).	*Planned*
- Design and deploy enhancements to the USPTO offerings based on customer analysis.	*Planned*
- Enable EFS to accept all incoming documents and amendment processing.	*Planned*
- Ensure that EFS supports outgoing correspondence.	*Planned*
- Establish a Biotech International Database. Proceed toward uniform Trilateral access to mega information from published and granted patent applications through EPO hosting of Publication Site for Issued and Published Sequences (PSIPs).	*Planned*
- Provide examiners with enhanced access to patent information, via eDAN, by creating a repository for multiple file types.	*In Process*
- Complete the Electronic Filing System (EFS) server build.	*In Process*
- Develop proof of concept to receive expanded filing formats in the EFS server.	*Planned*

Objective 1.4 Establish an information technology security program for fully certifying and accrediting the security of every automated information system [E-Government 4].

As the OCIO further develops the USPTO e-Government environment, it is imperative that internal and external users of USPTO systems be confident that the information contained in AIS's and information in transit is secure. The need to conduct business transactions electronically and the availability of patent and trademark information electronically greatly increase the risk of attack and intrusion into the USPTO's architecture, network, databases, and data repositories. It is because of these risks that a strong information technology security program is of central importance to ensuring that there is minimal disruption to business operations. To strengthen information technology security, the OCIO has developed an enterprise-wide IT security program that focuses on the certification and accreditation of all

USPTO AIS's at a minimum of every three years, in conjunction with compliance testing and self-assessments of AIS's. The certification and accreditation activities will meet the Federal Information System Management Act requirements. User awareness security training for all employees and contractors is also held every year.

The criticality of this effort has increased following a determination in 2003 by the Office of the Inspector General that the USPTO is not fully compliant with the Federal Information Security Management Act. The OCIO uses independent resources to assure that all AIS's are certified and accredited in a timely manner. Successful implementation of firewalls, public key infrastructure (PKI), incident handling procedures, and intrusion detection on local network segments and certification and accreditation procedures testify to the OCIO's commitment to information system security. The most recent report from the Department of Commerce Independent Federal Information Security Management Act Evaluation, 0SE-16146, page 8, cites "We reported in last year's evaluation that the Director of USPTO has made a commitment to protect the business information assets; the certification and accreditation program, under the leadership of USPTO's CIO, confirms this commitment."
The tasks that support this objective are as follows:

Tasks for Objective 1.4	Status
- Update OCIO Technology Standards and Guidelines (TSG's) for IT security. Each document provides guidance for managers to utilize in preparing security planning documents for AIS projects. The updated TSG's build IT security features and controls into all AIS projects.	*Completed*
- Firewall Upgrade - The firewall upgrade project upgraded USPTO firewall software to latest / optimized versions and deployed a companion 3rd party product that acts as a facilitator for Internet access, minimizing USPTO bandwidth requirements and removing the need for authentication as part of Internet access.	*Completed*
- Firewall Consolidation - The consolidated firewall redesigns the solution, creating an unambiguous three-tier architecture configured to perform in consideration of USPTO's increasing image repository at lower annual cost.	*In Process*
- PKI / Smartcard - As part of relocation to Alexandria Headquarters, USPTO deployed Smartcards for physical access control at the new facility. By adding a second chip for logical access control, OCIO took advantage of an existing program to enable secured transactions in consideration of government-wide e-Authentication initiatives. The Smartcard is compliant with Federal Identity Credentialing Committee (FICC) standards and recent guidelines mandated by OMB. Smartcard based access offers increased assurance as required for digital signatures and remote access. Enterprise Directory Services (EDS) are a required enabling technology to realize the Smartcard value proposition. This project lays basic infrastructure and demonstrates capability. Subsequent phases would deploy to the enterprise as required.	*In Process*

Tasks for Objective 1.4	Status
- PKI / e-Authorization - The digital credentials used in Smartcards become exponentially more valuable as more service-providing agencies recognize them. This project develops reusable component software to enable the authentication of system access based on third-party credentials.	*In Process*
- Consolidated Auditing - Auditing for security events is a requirement of the Federal Information Systems Management Act (FISMA). This project creates a centralized auditing solution to support this requirement and the analysis of security incidents. Log information will be collected and consolidated from heterogeneous platforms and devices enabling an integrated analysis.	*Planned*
- Contractor Facility Inspection - The Federal Information Systems Management Act (FISMA) requires review of security controls for IT systems including those operated by contractors at their own facilities. This project will help USPTO identify inspection criteria and conduct inspections on contractor facilities in FY 2004.	*Planned*
- Security Policy Development / Approval - IT Security Policy is the high-level guidance that represents the USPTO specific balance of business and security priorities. In general, USPTO is obliged to align with Federal guidance. The Security Policy Development / Approval initiative gathers business and OCIO stakeholder requirements to identify the right balance of business and security priorities in consistent and authoritative guidance.	*Planned*
- Develop and implement IT Security training program	*Completed*
- User awareness training is completed by all USPTO employees on an annual basis.	*Ongoing*
- Certify and accredit AIS's. Certification and accreditation (C&A) of the IT security of all USPTO AIS's is an ongoing measure of system security, and will be incorporated into the system life cycle for all AIS's. The OCIO has completed C&A activities for mission critical applications.	*Ongoing*
- Develop and improve C&A procedures.	*In Process*
- Complete National Institute for Standards and Technology self-assessments.	*In Process*
- Maintain compliance testing plan. The plan includes Security Test and Evaluation methods, system audits, and vulnerability testing, and is part of the certification and accreditation work stream.	*In Process*
- Test AIS's for compliance.	*In Process*

Objective 1.5 Continue to enhance technology capabilities of automated information systems and infrastructure to provide external access to the USPTO automated information systems in a secure, controlled manner.

In the recent years, the USPTO has witnessed increasing demand for increased agility and capability in its infrastructure to provide secure access to its internal resources from external environments. The three main constituent groups who are driving this demand are the USPTO employees, particularly Patents and Trademark examiners who wish to telecommute, USPTO contractors/vendors who provide AIS development, and the global intellectual property office partners, such as the WIPO, JPO and EPO, with whom the USPTO is continually increasing its commitment to coordinate and facilitate electronic information sharing.

The convergence of these three groups' distinct external access requirements, each with considerable complexities in its own right, compounds the overall complexities of addressing the divergent external access requirements. An enterprise approach to secure and remote access to USPTO resources is a solution that can address the divergent requirements. Such an enterprise approach to architect, design and implement an secure, remote access solution which provides a common framework to accommodate the disparate external access requests provides the cost-avoidance benefit derived from the expected scale of economy factor sometime into its steady-state lifecycle.

For the first of the external access requirements group, the USPTO employees, there currently exist two Work-at-Home programs, which provide some of its employees with telecommuting options as required by Public Law 106-346 while simultaneously managing the workforce within space constraints at USPTO facilities. The nationally recognized Trademark Work-at-Home (TW@H), and the Trademark Trial and Appeal Board Work-at-Home (TTAB Work@Home) program have provided tangible benefits, such as increased employee satisfaction and retention through telecommuting opportunities, and cost savings from workspace sharing arrangements for those who primarily work from home.

For the second of the external access requirements group, USPTO vendors/contractors, a Secure External Access Solution (SEAS) project was established in FY 2004 to migrate the various one-off vendor/contractor network connectivity solutions onto a consolidated and centrally managed framework. The impending Data Center move driven by the Alexandria Headquarters relocation provides further opportunities to complete the one-off vendor/contractor network connectivity solutions onto the SEAS framework.

For the third of the external access requirements group, the global intellectual property office partners, the Trilateral Network (TRINET) project has been, since 1998, providing secure network connectivity for the exchange of sensitive patent information between the Trilateral Partners and other subscriber organizations in the international intellectual property community. TRINET is used to exchange intellectual property information in the form of sensitive patent documents and facilitate international patent examination activities by making the various partners' internal search system available to authorized TRINET users. Although initially built upon an international private, frame-relay based, Wide Area Network (WAN), TRINET now

utilizes the public Internet as the network media/carrier for cost savings and ensures security and privacy of data exchanges via Virtual Private Network (VPN) encryption technologies.

The USPTO intends to increase the agility and capability of its ability to service the external access requirements of the three constituent groups by merging the best practices of some of its current projects (TW@H and SEAS specifically) to provide a common framework to provide an Enterprise, Secure Remote Access solution. This common framework will leverage the USPTO infrastructure initiatives currently under way, such as the Enterprise Directory System (EDS), Public Key Infrastructure for USPTO, Firewall Consolidation Effort, SEAS, Security Policy Development, TW@H, TTAB Work@Home, and Image File Wrapper/Patent Enterprise Access Integration (PEAI) Remote Access.

In consideration of the planned relocation to Alexandria Headquarters, the OCIO envisions an opportunity to implement a new, enterprise, secure remote access framework that will result in more cost effective and secure centrally managed remote access solution to the USPTO employees, to the Trinet/WIPO partners, and to USPTO vendor/contractors staff.

The tasks that support this objective are as follows:

Tasks for Objective 1.5	Status
- Perform load testing prior production deployment to simulate anticipated work volumes using new applications Trademark Information System (TIS), First Action System for Trademarks (FAST), and Madrid MiTEAS on TWAH server clusters.	*In Process*
- Design replacement hotel reservation system, which will be deployed at the new facility in Alexandria and expand capability to additional users. The replacement hotel reservation system will allow participants to reserve office space at the USPTO over the Intranet. Hoteling enhances the ability of customers to communicate with hoteling participants using dedicated phone lines, roaming profiles, and custom desktop configurations for both office and home locations. The replacement hotel reservation system will provide greater system scalability to facilitate the addition of new users to the program. Trademark personnel that are in the TW@H program utilize the hotel reservation system.	*In Process*
- Prototype roaming profiles and user customized configurations.	*Completed*
- Enhance backup for user data with network attached storage.	*Completed*
- Deploy laptops to users in the TW@H program that live 60 or more miles from the office.	*In Process*

Tasks for Objective 1.5	Status
- Develop Secure External Access S (SEAS) - The primary goal of SEAS is to allow various remote users and contractors access to USPTO applications and services in the most secure manner available. SEAS will be the primary option for contractors that lack appropriate controls for remote access or that lack services due to disruptions caused by the relocation to the Alexandria Headquarters.	*In Process*

Objective 1.6 Integrate automated information systems to support the electronic workflow of a post-grant document review process [E-Government 3].

In preparation for the expected passage of patent post-grant review legislation requiring that the Board of Patent Appeals and Interferences decide all inter-partes proceedings in one calendar year, the OCIO plans to address the need for electronic filing and tracking of post grant reviews using an automated information system. It is envisioned that a post grant review electronic filing system will support the workload generated by the anticipated increase in the demand for inter-partes proceedings upon the passage of the patent post-grant review legislation. The post grant review electronic filing system will enable automated workflow, including electronic filing of post-grant review requests, electronic tracking of post-grant review requests, and document text search and retrieval for USPTO users across multiple proceedings.

As a key component of electronic post-grant patent review process, the Board of Patent Appeals and Interferences Information System (BPAIIS) provides significant cost and labor savings by eliminating inefficient paper processes that currently require contractor support and the rental of storage space for files. All necessary review files would be consolidated into an electronic filing system, which will enable the USPTO to promote its flexi-place (work-at-home) program for Administrative Patent Judges and enhance its commitment to the retention of senior staff. A similar AIS, the Trademark Trial and Appeal Board Information System (TTABIS), is currently in use by the Trademark Trial and Appeal Board (TTAB). The likely release date for the new patent AIS would be in 2005, concurrent with the anticipated implementation of patent post-grant review proceedings.

The tasks that support this objective are as follows:

Tasks for Objective 1.6	Status
- Improve workflow at BPAI in the handling of inter partes communications by scanning all outside communications for interferences declared on and after June 1, 2002.	*In Progress*
- Prepare for expansion of BPAI jurisdiction by developing e-filing and e-processing systems for inter partes proceedings at BPAI.	*In Progress*
- Integrate the electronic handling of appeal communications at BPAI with the Patents electronic filing system.	*In Progress*

Tasks for Objective 1.6	Status
- Implement additional enhancements to the TTABIS to improve workflow, automate institution of oppositions, and expand the links between TTABIS and Trademarks' automated information systems.	*Planned*
- Expand e-filing at TTAB, with capacity to handle petitions to cancel, notices of appeal and all filings relating to ex parte appeals by May 2004.	*In Process*
- Improve responsiveness to customers by developing a plan to issue TTAB orders and decisions by e-mail and to permit litigants before the TTAB to serve papers on their opponents by e-mail.	*Planned*
- Enhance search capabilities of TTAB Vue on-line docket system.	*Planned*

Objective 1.7 Modernize the financial management systems in accordance with E-Government initiative.

Sound planning and effective uses of the USPTO's resources are dependent on the availability of accurate financial data. Reliable financial information is important for providing corporate advisory services in the areas of budget interpretation, formulation, justification; financial accounting; planning and implementation of all fee setting and collection activities; and procurement activities. The versatility of these functions requires a financial management system that can accommodate these needs and workflows. This requirement involves a re-architecture of the core financial transaction processing system to enable improved performance and future user enhancements.

Currently, the Core Financial System (CFS) provides support for the financial management requirements of the agency. The CFS consists of the financial accounting system (Momentum Financials), procurement system (Procurement Desktop), and a travel management system (Travel Manager). The USPTO recognizes the need to update financial systems with evolving technologies to meet the e-Government initiatives and improve USPTO's ability to comply with the legislative requirements in financial and procurement management.

As part of normal operations and maintenance of CFS, Travel Manager will be upgraded in FY 2004 and Momentum Financials will be upgraded in FY 2005. The Internet Purchasing Application (IPA) and the Procurement Desktop (PD) will also be replaced to comply with the Section 508 legislative requirement in FY 2005. This replacement will facilitate e-Government goals and greatly increase the USPTO's ability to obtain the best business arrangements in acquiring goods and services.

To support the e-Government initiatives in the President's Management Agenda, the USPTO plans to implement Government-wide e-Travel by the end of FY 2006. Once implemented, the e-Travel initiative envisions an end-to-end travel service supporting activities ranging from planning, reservations, and authorizations to claims and voucher reconciliation. This vendor owned and operated commercial off the shelf application will replace our current travel software tool, Travel Manager. Integration of e-Travel to USPTO's Core Financial System and

Momentum Financials will enable USPTO to record the financial impact of each transaction that will be a part of the e-Travel implementation.

Changes are also planned for the Revenue Accounting and Management (RAM) System. The RAM system serves as an interface to many other USPTO applications to obtain fee-related data. Most importantly, the RAM system is an important provider for achieving the USPTO e-Government initiatives. The RAM system is the "gateway" for collection of electronic payments at the USPTO Websites. Due to the rapid growth of e-Commerce at the USPTO over the past few years, the RAM system may need redesigning to accommodate this continued growth. Possible replacement options to the RAM system include moving away from a Cool-Gen platform to a java-based (J2EE) platform that would provide better scalability for e-Commerce growth and could potentially take RAM for internal USPTO users from a client/server application to a web-based application. In addition, the functional extensions for RAM will continue throughout FY 2008. These enhancements will support e-Commerce and improve accountability through interfaces with various USPTO systems such as EFS, PALM, and TIS. Other features for RAM will expand the number and type of USPTO products and services that customers can order over the Internet and satisfy Section 508 compliance.

The Enterprise Data Warehouse (EDW) provides meaningful information to USPTO managers for analysis and decision making purposes in areas such as productivity analysis and isolation of significant productivity factors, workflow analysis for reduced patent and trademark processing cycle times, and technology trend and workload analyses for staffing and organizational structure decisions, and financial analysis for resource allocation decisions. The EDW currently obtains information from disparate systems and presents it a way that is significant to managers across the agency. To sustain these services, the long-term data warehouse activities include data quality engineering and introduction of data mining to discover patterns in the information and to conduct advanced data analysis. Employing these methodologies will (1) leverage the benefits of data sharing; (2) focus attention on data quality and data integration; and (3) provide strategic and tactical information for decision-making.

As the USPTO leverages new reporting technologies for EDW and other systems, one of the goals is to provide managers with a tool that enables integrated reporting while also providing dashboards and scorecards to measure metrics against strategic goals. The Office of Finance plans to upgrade the current version of Business Objects and leverage existing web portal technology to provide a powerful web query and performance management tool. This solution is envisioned to be a ‘one stop shop’ for consolidated reporting as well as goal management, collaboration, and analysis.

The enhancement activities for the USPTO financial management systems will help to improve customer service, workload management, data quality, and fiscal integrity. The ultimate objective is to expand USPTO’s ability to participate in e-Government and paperwork reduction initiatives, increase compliance with Section 508, and augment existing automated acquisition capabilities. Achievement of these efforts will enable the USPTO to maintain high quality of financial information and acquire the goods and services necessary for its mission.

The tasks that support this objective are as follows:

Tasks for Objective 1.7	Status
- Replace PD with Momentum Acquisitions and Related Modules.	*Planned*
- Implement Central Contractor Registration Database Interface.	*Planned*
- Support legislative fee change process by enhancing RAM business support capability.	*In Process*
- Enhance RAM to support the patent Image File Wrapper (IFW) system.	*Planned*
- Implement e-Travel for USPTO as part of the President's Management Agenda for expanding e-Government.	*Planned*
- Develop a Proof of Concept for application architecture.	*Planned*
- Transition financial systems to service oriented architecture.	*Planned*
- Ensure Section 508 compliance of all the sub-systems of the Core Financial System.	*In Process*

STRATEGIC GOAL 2: SUPPORT THE RELOCATION OF THE USPTO TO THE HEADQUARTERS CAMPUS IN ALEXANDRIA, VA.

Strategic Goal 2 - Objectives
2.1. Relocate USPTO desktops and peripheral equipment. 2.2. Relocate the OCIO organization. 2.3. Relocate and consolidate the public search facilities into a single electronic search facility. 2.4. Relocate the USPTO data center and ETC lab. 2.5. Support network, telecommunications, and IT infrastructure relocation.

In November 2003, the USPTO began the implementation phase of the relocation of its facilities from 18 buildings spread throughout Crystal City to a consolidated campus on the new headquarters in Alexandria, Virginia. This consolidation is expected to save the USPTO $72 million over the 20-year term of the lease and at the same time provide a more efficient work facility.

In conjunction with the move and as part of the transformation to a fully electronic workplace, the agency plans to eliminate paper files in both internal processes and public search areas to the maximum extent possible. However, the USPTO will face numerous logistical and operational challenges in executing the move to Alexandria Headquarters. Dual operations will be required during the phased implementation of the relocation. Supporting employees and customers at geographically separate locations requires careful planning.

Objective 2.1 Relocate USPTO desktops and peripheral equipment.

The relocation of desktops and associated equipment to the Alexandria Headquarters facility is essential to maintaining the productivity of USPTO employees who are transitioning from their Crystal City-based office space to their new space at Alexandria Headquarters. The ability of employees to work productively at the new location depends largely on their access to computer-based programs and to technical support for troubleshooting. This objective includes the successful relocation of desktop workstations (with connected peripherals) and networked equipment. This complex effort is occurring within a tight timeframe in order to minimize any disruptions to employee production. This relocation process will also require close coordination and integration with the USPTO's existing asset management process. This effort will follow four major relocation plans (Transition and Relocation Plan, Alexandria Headquarters Housing Plan, Crystal City Exit Strategy, and Alexandria Headquarters Computer Relocation Plan).

The tasks that support this objective are as follows:

Tasks for Objective 2.1	Status
- Complete USPTO Transition and Relocation Plan for Jefferson and Remsen buildings.	*Completed*
- Complete relocation procurement for Jefferson and Remsen buildings.	*Completed*

Tasks for Objective 2.1	Status
- Relocate computers and peripheral equipment to Remsen and Jefferson buildings.	*Completed*
- Complete relocation procurement for Knox, Madison, and Randolph buildings.	*In Process*
- Complete USPTO Transition and Relocation Plan for Knox, Madison, and Randolph buildings.	*In Process*
- Determine Alexandria Headquarters Housing Plan.	*In Process*
- Complete computer relocation plan for Knox, Madison, and Randolph buildings.	*In Process*
- Relocate computers and peripheral equipment to Madison building.	*Planned*
- Relocate computers and peripheral equipment to Randolph building.	*Planned*
- Relocate computers and peripheral equipment to Knox building.	*Planned*

Objective 2.2 Relocate the OCIO organization.

All OCIO employees scheduled to be relocated to the Alexandria Headquarters will have moved by spring 2005. The timeframe for the OCIO relocation will coincide with the move of the Data Center. The offices and personnel that manage the Data Center will be moved first, which will start in approximately January 2005. The duration of the move is expected to be about three months.

The remainder of the OCIO employees will move to Alexandria Headquarters after the Data Center relocation. Business Areas and external customers will be notified of new contact information when the move occurs. A move coordinator will be assigned to the OCIO to ensure that the transition minimizes work disruptions as part of the overall relocation procedures. The primary goal is to ensure that OCIO relocation is conducted properly so that the IT facilities and the systems managed by the OCIO operate without interruption and provide continuous support to USPTO during this transition.

The relocation plan for the OCIO will be implemented in a way that will not jeopardize the current services that are being provided. The move should enhance the IT facilities through space consolidation and improved physical environment for maintaining network systems. The new location will have the necessary infrastructure that will enable the OCIO employees to effectively manage the IT facilities once the relocation is completed.

The tasks that support this objective are as follows:

Tasks for Objective 2.2	Status
- Relocate OCIO organizations to Alexandria Headquarters.	*Planned*
- Ensure that operations of facilities and systems that are managed by the OCIO will be unaffected by the move.	*Planned*

Tasks for Objective 2.2	Status
- Notify Business Areas and other external customers.	*Planned*

Objective 2.3 Relocate and consolidate the public search facilities into a single electronic search facility.

The relocation of the OCIO facilities is part of a structured management approach of interrelated relocation projects to ensure that the new buildings are operating and can support the USPTO personnel with space, hardware, and software. The relocation of the patent and trademark public search facilities to the new campus provides the USPTO with the opportunity to consolidate the operations of the public search facilities into a single electronic facility. Search facility consolidation will enable a more effective use of personnel and technology resources through process efficiencies generated by consolidation of resources. The move will also enable the search facilities to reduce reliance on many paper search processes by focusing on the further development and maintenance of universal public workstations with the capabilities to perform document searches. The Alexandria Headquarters Public Search Facility is being designed with the goal of effective and efficient access to resources for both first time and frequent users. However, it is anticipated that the facility will be used primarily by routine and professional searchers, as are the current public search facilities.

The tasks that support this objective are as follows:

Tasks for Objective 2.3	Status
- Design Public Search Facility.	*In Process*
- Award contract for relocation of Public Search Facility.	*In Process*
- Procure universal public workstations.	*Planned*
- Relocate Public Search Facility to new Alexandria Headquarters facility.	*Planned*

Objective 2.4 Relocate the USPTO data center and Emerging Technology Center Lab.

The USPTO's Emerging Technology Center (ETC) provides a laboratory for automated information system development that simulates the production data center environment for formal qualification testing, as well as meeting and training facilities for USPTO use. It is anticipated that the relocation of the ETC will occur over a one-week period during which the entire center will be considered "off-line" throughout the relocation. During that time, all laboratory systems will be shut down at the Crystal City locations, transported, and reinstalled at the Alexandria Headquarters facility. The move date for the ETC will occur approximately 30 days prior to the data center move to enable time for "lessons learned" to be applied towards the data center relocation, which is currently scheduled for the first quarter 2005. The ETC move should not be detrimental to business productivity due to the quick turnaround time for relocating to Alexandria Headquarters.

The USPTO data center operates critical systems that form the IT infrastructure, which supports all the AIS's and core network equipment at the USPTO. This relocation effort will minimize business impact while allowing adequate time for testing and contingency actives once the data center equipment is moved.

The relocation of the USPTO data center from Crystal City to Alexandria will occur over weekends during the second quarter of 2005. The move will coincide with the end of quiet time in January 2005. The move will include the following activities: (1) ensure that the data center facilities are ready for the move to the new location. (2) ensure the Network and SAN cabling and infrastructure switches are ready for the move; (3) move critical infrastructure support services to the Alexandria facility such as Domain Network Service (DNS), Windows Domain, Windows Internet Naming Service (WINS), and Dynamic Host Configuration Protocol (DHCP); (4) test and verify SAN data replication is operational between Crystal City and Alexandria; (5) gather lessons learned from the move of least critical production systems; and (6) move AIS systems by Affinity groups to minimize impact to business.

The tasks that support this objective are as follows:

Tasks for Objective 2.4	Status
- Design Alexandria Headquarters Emerging Technology Center (ETC).	*In Process*
- Test-fit Alexandria Headquarters ETC.	*In Process*
- Design Alexandria Headquarters data center and Network Operations Center.	*In Process*
- Test-fit Alexandria Headquarters data center and Network Operations Control Center (NOCC).	*In Process*
- Document the Current USPTO environment and baseline.	*In Process*
- Document the Target USPTO environment for the Alexandria data centers.	*In Process*
- Develop relocation alternatives and recommendations.	*Planned*
- Develop high level relocation plan and cost estimate.	*Planned*
- Final cost Estimates for the Relocation.	*Planned*
- Finalize the Relocation Concept Document.	*Planned*
- Develop detailed plans for ETC relocation.	*In Process*
- Commission and certificate of occupancy for the Alexandria Headquarters ETC lab.	*Planned*
- Commission and certificate of occupancy for the Alexandria Headquarters data center and Network Operations Control Center (NOCC).	*Planned*
- Develop detailed plans incorporating lessons learned from ETC relocation.	*Planned*
- Create detailed project plan and Move day Timeline plans.	*Planned*
- Relocate equipment to Alexandria Headquarters ETC.	*Planned*

Tasks for Objective 2.4	Status
- Relocate equipment to Alexandria Headquarters data center.	*Planned*

Objective 2.5 Support Network, Telecommunications, and IT Infrastructure Relocation.

Support for the IT infrastructure relocation involves connecting the Crystal City facilities to the Alexandria Headquarters campus through networking and telecommunications services. Activities that support the IT infrastructure relocation include the design/development, installation, and testing of:

- Fiber Connection – A redundant network path between the two campuses to provide connectivity between separate locations.
- Cable Plant – The cable backbone, which supports the installation of network electronics (e.g. data switches and Private Branch Exchange (PBX) switches).
- Data Switches – Procure a minimal number of new data switches and relocate existing switches to enable the sharing of data between devices (e.g. printers, serial devices).
- Telecommunications – Procure a new PBX switch and establish new phone service at Alexandria Headquarters.

Each of these activities provides connectivity between the Crystal City and Alexandria Headquarters facility and/or connectivity of floors and buildings at the new Alexandria Headquarters campus. Connectivity through telecommunications will also be important during the move as new phone and fax numbers are implemented and old numbers are phased out. Telecommunications services will include the PSTN for voice and data telecommunications needs and a new PBX switch. Other Alexandria Headquarters IT capabilities will be deployed to address move-related concerns including meeting room reservation capabilities, electronic building directories, a facilities help desk and facility management system, security access control system, and modifications to the existing OCIO help desk.

The tasks that support this objective are as follows:

Tasks for Objective 2.5	Status
- Jefferson Building	
- Procure and Install Temporary Connectivity.	*Completed*
- Procure and Install Cable Plant.	*Completed*
- Procure and Install Telecom Services.	*Completed*
- Procure and Install Data Services.	*Completed*
- Procure and Install New Alexandria Headquarters IT Capability.	*Completed*
- Remsen Building	
- Procure and Install Temporary Connectivity.	*Completed*

Tasks for Objective 2.5	Status
- Procure and Install Cable Plant.	*Completed*
- Procure and Install Telecom Services.	*Completed*
- Procure and Install Data Services.	*Completed*
- Procure and Install New Alexandria Headquarters IT Capability.	*Completed*
- Madison Building.	
- Install PBX and make it operational.	*In Process*
- Install phones.	*In Process*
- Relocate data switches.	*In Process*
- Install Cable Plant.	*In Process*
- Relocate host PBX from interim IT facility in Remsen building to Madison Data Center.	*In Process*
- Randolph Building	
- Install PBX and make it operational.	*In Process*
- Install phones.	*In Process*
- Relocate data switches.	*In Process*
- Install cable plant.	*In Process*
- Knox Building	
- Install phones.	*Planned*
- Relocate data switches.	*Planned*
- Relocate Cable Plant.	*Planned*

STRATEGIC GOAL 3: PROVIDE AND SUPPORT A WORLD-CLASS INFORMATION TECHNOLOGY OPERATION THAT MEETS OR EXCEEDS END-USER NEEDS.

Strategic Goal 3 - Objectives
3.1. Establish a world-class IT operation and customer support capability.
3.2. Decrease the potential for system outages and other errors.
3.3. Minimize the impact to business operations when system outages and other errors occur.
3.4. Efficiently and effectively operate USPTO information technology systems and environments.
3.5. Enhance and maintain USPTO's automated information systems.

In the increasingly electronic environment in which the USPTO functions, the provision and support of USPTO's world-class information technology systems is of high business importance. The OCIO's effort to establish a world-class IT operation and customer support capability focuses on providing timely service, high-quality products, and a level of excellence that continually surpasses customer expectations. Providing exceptional services to support an entirely electronic environment requires additional support staff as more demands are placed on the help desk and business centers from increasing number of users. It is also necessary to ensure that the support personnel are technically knowledgeable and skilled to attend to the rising demands. The OCIO will strive to provide unparalleled IT operations and support despite the new challenges from base budget reductions, hiring restrictions, and expansion of electronic government. To achieve this outcome, the automated information systems and supporting networks that drive business processes must be consistently operating with minimal system outages and other errors. The effort to ensure that these processes are meeting end-user needs is three-fold, consisting of preventative maintenance, communications, and system operations. The USPTO maintains and operates the production technical environment to minimize lost productivity due to system downtime, provide high availability, maintain the current business production environment, and improve and enhance current business and technology infrastructure. Communications and support are provided to assist users in resolving AIS and other technology problems and to educate users on the proper use of those systems.

Objective 3.1 Establish a world-class information technology operation and customer support capability.

The OCIO will establish a world-class IT operation defined as one that meets or exceeds all of its internal and external customers' requirements detailed in service level agreements and developed through personal customer relationships, as evidenced by unsolicited appreciation, survey instrument feedback, and independent validation and verification evaluations. Additionally, the determination and use of supporting metrics and best practice comparisons are other means by which the OCIO will gauge operational effectiveness and efficiency. These tools help to identify services required to meet business area needs while defining comprehensive strategies for service level agreements, commitment goals, service provider boundaries and constraints, and mechanisms for reporting performance. These actions help establish valuable communication between the customer and the service provider.

The insight gained by the OCIO assessing its services and products is critical for making informed decisions related to improving IT operations business processes. Specifically, this

review is integral for managing a world-class data center that takes full advantage of available technology for disaster recovery, continuity of operations, data replication, and data transfer.

The tasks that support this objective are as follows:

Tasks for Objective 3.1	Status
- Develop Services Model	*Complete*
- Develop a comprehensive strategy for service level agreements.	*In Process*
- Map Services Model to Service Level Agreements	*In Process*
- Update the OCIO Service Commitment Statement.	*In Process*
- Conduct independent study of current services and customer satisfaction.	*Complete*
- Develop improvement plan based on study results.	*In Process*
- Implement improvements based on the study results.	*In Process*
- Improve documentation, analysis, usage of critical problem notices, and root cause analysis data.	*Ongoing*
- Develop operational reports for analysis and ongoing focus.	*Completed*
- Establish website content management methodology and improve website server statistics program.	*In Process*
- Provide customers with electronic access to user guides and change notifications.	*Ongoing*

Objective 3.2 Decrease the potential for system outages and other errors, thereby reducing negative impacts to the business operations when system outages and other errors occur.

As user requirements for USPTO systems become more complex, requiring greater functionality and the need for 24x7 system performance, it is imperative that the technical environment support more complex business needs. The OCIO will support continual monitoring of system performance and preventative maintenance of system functionality that is essential to minimizing system downtime and other errors. The OCIO will also focus on decreasing the potential for system outages and errors for automated information systems, which support core business processes. In addition, the OCIO will focus on network management to ensure that PTOnet is operating at optimum level and is restored to acceptable service levels when an outage or degraded service level is detected. This dual focus will help minimize lost productivity since these operations impact most business operations. The OCIO will also continue to support database administration since it is vital to ensuring that end-users have the needed information. This will involve keeping current information systems operating through the design, installation, configuration, management, and maintenance of all database management software. The OCIO will also focus on the reduction and eventual elimination of all single points of failure in production systems and IT infrastructure to decrease the potential for system outages.

The tasks that support this objective are as follows:

Tasks for Objective 3.2	Status
- Perform preventative maintenance on automated information systems (AIS's).	*Ongoing*
- Perform preventative maintenance on the PTOnet network.	*Ongoing*
- Perform database administration services.	*Ongoing*
- Reduce/eliminate all single points of failure in all production systems and within IT infrastructure components.	*In Process*
- Implement disaster recovery and continuity of operations for all USPTO AIS's and associated IT infrastructure.	*In Process*

Objective 3.3 Minimize the impact to business operations when system outages and other errors occur.

The OCIO will support end-user needs when system outages or other errors occur through timely, reliable, innovative, and cost-effective communications. Communications will focus on informing end users of system outages and expected time for restoration of services. The timely restoration of services is highly important to minimize the impact that service outages could have on business operations. To achieve this objective, the OCIO provides 24x7 operations and systems support coverage to address systems outages and other disruptions.

Support during system downtime and other assistance for end-users with technological difficulties are addressed with OCIO services including Help Desk, desktop support, and other problem resolution services. Increased reliance on information technology has amplified demand for Help Desk services to trouble-shoot and resolve or reassign problems. Demand for desktop services such as resolving desktop problems, moving, deploying, and surplusing desktop hardware, and repairing or replacing failed hardware has also increased. The level of service provided for these problem resolution services is stringently measured against best-practice service level agreements. The use of an asset and configuration management system enables the USPTO to manage its AIS-related assets in an optimal way by providing information on what and where specific assets are, which is vital to minimizing time required to resolve problems.

The tasks that support this objective are as follows:

Tasks for Objective 3.3	Status
- Provide help desk services.	*Ongoing*
- Provide desktop services.	*Ongoing*
- Provide problem resolution services.	*Ongoing*
- Provide system services.	*Ongoing*
- Implement an asset and configuration management system.	*In Process*
- Extend operations and systems support to eventually reach 24/7 coverage.	*Ongoing*

Objective 3.4 Efficiently and effectively operate USPTO information technology systems and environments.

Continuous, consistent operation of key information technology systems and environments provides the third facet of the OCIO's goal to provide a production technical environment that meets end user needs. This objective focuses on "keeping the trains running," which has always been a priority. Key operations that require continual monitoring include:

- *PTOnet* – Includes PKI operations support, firewall operations, enterprise-wide login services, domain services, file and network services, and the operation of servers that house commercial off-the-shelf (COTS) applications.
- *USPTO data center* – The data center provides information technology products and services to all USPTO employees, including a wide technological range of servers and related data storage systems that are available 24x7.
- *USPTO web services, Intranet, and Internet* – Provides support services such as web page design and creation, troubleshooting, recovery, and maintenance strategies for COTS applications designed to operate websites, and content management services.

These operations are supported by the OCIO with user administration services (such as password and login setup) and operational documentation (such as user guides). The USPTO intends to provide a high level of support for the continual operation of the production technical environment so that user needs are met, including high availability of USPTO systems and the provision of current information to users.

The tasks that support this objective are as follows:

Tasks for Objective 3.4	Status
- Operate PTOnet.	*Ongoing*
- Operate the USPTO data center.	*Ongoing*
- Provide user-administration services.	*Ongoing*
- Operate USPTO web services, Intranet, and Internet.	*Ongoing*
- Provide user guides and other documentation.	*Ongoing*

Objective 3.5 Enhance and maintain USPTO's automated information systems.

The USPTO has been focusing on replacing the heterogeneous collection of incompatible hardware and software systems with a standards-based open system infrastructure. New systems and capabilities are being deployed based on client-server architecture with reliance on PTOnet to deliver needed services. While USPTO's computing environment provides many business benefits, there are many new challenges in managing it.

For the USPTO to successfully manage its IT assets and support both its ongoing and new business processes, USPTO must move toward adopting an enterprise view to manage these critically important assets. Effectively managing the USPTO's computing environment encompasses several functions ranging from application change management to configuration change management. Key aspects of the computing environment include release management, functional roadmaps, and transition to new technologies.

A release, as opposed to a baseline, is a series of new or modified capabilities delivered to a customer at a point in time. A release may be viewed as an installation of the product baseline or its current configuration identification (baseline + changes). A release usually denotes a major functional change and may include several versions. Release management consists of screening and assigning requirements changes or problem fixes to a specific distribution of the product. USPTO will incorporate release management into IT planning to ensure that system changes occur in a more consistent and regular manner. The OCIO will be able to anticipate changes in systems in a more timely and predictable manner, and determine the duration of the actual effort to complete the modifications.

In addition, the Enterprise Information Technology Roadmap (Enterprise IT Roadmap) is a critical part of managing the IT projects at USPTO. The Enterprise IT Roadmap presents the strategic and operational plans for each of the agency's more than 100 AIS's. This document identifies the relationship between the aforementioned plans and the USPTO's business initiatives, technology initiatives, and evolving standards inventory. The Enterprise IT Roadmap consists of four elements: (1) Functional Roadmap; (2) Application Roadmap; (3) Standards Roadmap; (4) Technology Roadmap; and (5) Integrated Roadmap:

- Functional Roadmap – Identifies business strategic initiatives defined by the 21st Century Strategic Plan and further developed by the Action Papers. This roadmap provides planned, strategic business and functional capability enhancements.
- Application Roadmap – Documents an AIS near- and long-term release plans. This roadmap will help OCIO transition toward an improved application architecture, inclusive of the service oriented architecture to support functional development.
- Standards Roadmap – Illustrates the evolution of the standards baseline at the USPTO based on the Technology Reference Model supplemented with information provided by the vendor community regarding their long-term support strategies.
- Technology Roadmap – Identified the major strategic IT initiatives set forth by the USPTO Strategic IT Plan and further developed through interviews with key OCIO managers and staff;
- Integrated Roadmap – Brings together the four roadmaps that shows how the AIS's support functional requirements, change as technology and standards evolve, and tracks the progress of USPTO applications. This roadmap provides a vertical, integrated view of releases for each AIS incorporating functional, Application, Standards, and Technology planning information.

Each of these Roadmap elements highlights the strategic, tactical, and operational planning information for components and initiatives across a five-year, forward looking, planning horizon that focuses on the business process and the customers' perspective.

The formulation of release management approach and inclusion of the Enterprise IT Roadmap will enable USPTO to strategically and effectively evolve current systems to incorporate new technologies. These two methodologies will provide the long-term planning needs to ensure that the AIS's meet the needs of the customer with adequate support from the vendors.

The OCIO will coordinate closely with the Business Area customers to ensure that asset management, especially for systems that are in operational/maintenance mode, continue to meet the needs of the end-users. This coordination will consist of procedures that will be developed from an enterprise perspective in order to effectively manage the integration of the AIS's, both legacy systems and new technologies. This approach will also help to identify areas in which enhancements or upgrades are necessary, and provide a clear methodology for employing system changes or replacements.

The tasks that support this objective are as follows:

Tasks for Objective 3.5	Status
- Formulate an approach for release management.	*Planned*
- Incorporate the Enterprise IT Roadmap into existing system development/enhancement planning.	*In Process*
- Develop a comprehensive strategy for change management.	*Planned*
- Define the high-level information requirements and system interfaces for managing USPTO's distributed IT assets.	*In Process*
- Enhance or replace the existing inventory management systems	*Ongoing*
- Develop a comprehensive approach to system-oriented architecture.	*Planned*
- Establish a methodology for migration strategy and standards.	*Planned*
- Upgrade or replace current help desk information systems.	*Planned*

STRATEGIC GOAL 4: LEVERAGE ENTERPRISE ARCHITECTURE TO IMPROVE INFORMATION TECHNOLOGY EFFICIENCY, EFFECTIVENESS, AND QUALITY.

Strategic Goal 4 - Objectives
4.1. Develop an enterprise architecture program and standards based on industry best practices, compliant with the Federal Enterprise Architecture.
4.2. Provide maximum availability of computer systems to examiners, attorneys, the public, and other patent and trademark offices in the event of an outage [E-Government 5].
4.3. Enhance and simplify the technology infrastructure to support business operations in an electronic government environment (i.e., simplify and unify).
4.4. Develop interoperability standards for data exchange with international partners, dissemination of intellectual property information, and system-to-system communications.

The Enterprise Architecture (EA) describes the relationships between the work the USPTO does, the information the agency uses, and the information technology (IT) the agency employs. Consequently, the EA provides the blueprints that form a master plan for ensuring the integrity and effectiveness of IT solutions. By aligning the requirements for IT with the USPTO's business processes, the OCIO will use the EA to make it easier to share information internally and to reduce the complexity of information systems required to operate e-Government solutions and services.

The USPTO EA provides established standards that guide the design and management of systems and set a strategic direction for critical enterprise-wide technologies and solutions by using the Enterprise IT Roadmap. This planning methodology helps to facilitate strategic, tactical, and operational IT planning at the USPTO and to benefit IT project management, through strategic and operational plans for each of the AIS's and the identification of linkages between those plans and the USPTO's strategic IT initiatives, and evolving standards baseline. The Enterprise IT Roadmap consists of four elements: (1) Functional Roadmap; (2) Application Roadmap; (3) Standards Roadmap; and (4) Technology Roadmap. Each of these Roadmap elements highlights the strategic, tactical, and operational planning information for components and initiatives across a five-year, forward looking, planning horizon that focuses on the business process and the customers' perspective. The Enterprise IT Roadmap provides an integrated view of the EA initiatives that are currently being deployed.

Critical EA initiatives that are underway include a high-availability server architecture that uses load balancing to maximize continuity of operations, and an enterprise storage management strategy that provides for optimal use of storage resources via a Storage Area Network (SAN). Leveraging the EA to ensure that critical technology meets IT security, backup and recovery, and distributed computing requirements improves scalability, reliability, and interoperability of OCIO solutions. For example, IT security solutions are critical to protecting the confidentiality, integrity, and availability of USPTO IT resources. The EA also guides resource decisions to reduce costs and improve business area performance by documenting the complexity of the enterprise, identifying improvement opportunities, and options for consolidating the architecture.

Objective 4.1 Develop an enterprise architecture program and standards based on industry best practices, compliant with the Federal Enterprise Architecture.

The Federal Enterprise Architecture (FEA) is being developed by the Office of Management and Budget (OMB) using interrelated "reference models" – e.g., Performance Reference Model (PRM), Business Reference Model (BRM), Data Reference Model (DRM), Service Component Reference Model (SRM), Technical Reference Model (TRM) – designed to facilitate cross-agency analysis and the identification of duplicative investments, gaps, and opportunities for collaboration within and across federal agencies. While all federal agencies regardless of size and resources are encouraged to use the FEA, the intent of the FEA is to illustrate "best practices" currently employed in several federal agencies and private corporations.

The OCIO will use the EA for evolving information systems and developing new systems that optimize mission value. This goals accomplished in logical and/or business perspectives (e.g., mission, business functions, information flows, and systems environments) and technical terms (e.g., software, hardware, and communications). The EA advancements also include a sequencing plan for transitioning from the baseline environment to the target environment. These EA blueprints form a master plan to assist in optimizing the interdependencies and interrelationships among USPTO's business operations and the underlying IT that supports operations. The Enterprise IT Roadmap should also provide insight into how well the USPTO is transitioning toward the target environment from functional, application, standards, and technology aspects of its IT systems.

The tasks that support this objective are as follows:

Tasks for Objective 4.1	Status
- Integrate Enterprise IT Roadmap into EA planning process. Incorporate the Functional, Application, Standards, and Technology Roadmaps into UEA development and maintenance.	*In Process*
- Develop SRM that links the USPTO's EA to the FEA from a service perspective.	*Planned*
- Develop BRM and PRM that links the USPTO's EA to the FEA from a business and performance perspective.	*Planned*

Tasks for Objective 4.1	Status
- Update the Technical Reference Model (TRM). The TRM, and its associated standards and product profiles are integral components of enterprise architecture. The TRM provides layers and interrelated set of models that allow for organizing, planning, and building an integrated set of information technology architectures. The updated TRM will customize and establish the reusable architectural patterns for standardized high-level architecture development in aligned with the FEA. It will also incorporate a technical life cycle that supports the containment and retirement of products and standards based on various conditions (e.g., obsolescence, non-supported technology).	*In Process*
- Revalidate the TRM. Ensure that the TRM is current to include new EA concepts, procedures, or policies that may have been recently developed.	*Planned*
- Establish an Architecture Migration Review and Compliance capability to facilitate EA migration, review candidate projects, and assess project alignment with the EA. This capability will involve the USPTO Enterprise Architecture Program Management Office on developing architectural compliance and solutions initiatives.	*In Process*
- Formulate a strategy to develop and implement the High-Level Architecture Technical Standards and Guidelines (HLA TSG). The OCIO maintains a HLA TSG that defines standards for describing the relationship of the AIS within the operational environment by providing textual and graphical descriptions of AIS hardware, software, and network components, and by illustrating the interconnections among these components. The HLA TSG also identifies interfaces with other systems and IT infrastructure components, and documents any modifications and upgrades that are needed to support the AIS.	*Planned*
- Develop and implement a solutions methodology that complies with the USPTO's EA. In addition, the solutions architecture will be aligned with the current TRM and its associated standards, with the following objectives: (1) reuse architecture through standardization of patterns for business topologies and runtime pattern process;(2) quickly respond to changing business requirements by leveraging a managed IT infrastructure; (3) promote vendor independence through the use of standards-based products and interchangeable components; (4) improve development efficiency across the USPTO business areas through common open systems environment and resource sharing, and (5) improve interoperability across USPTO applications and mission areas through common infrastructure components and services. The standards that are developed from the solutions architecture approach should serve as a guide for (1) acquiring IT products and services; (2) developing and maintaining AIS's; and (3) updating the EA infrastructure and its components. System transformation processes will also be more efficient with solutions architecture.	*Planned*

Tasks for Objective 4.1	Status
- Develop solutions architecture processes using best practices from industry and standards. Solutions architecture will enable USPTO to design systems and solutions encompassing both legacy and new technologies in an open environment. This architecture should help OCIO to develop strategic directions for products and solutions by identifying technical dependencies and the context for incorporating future technologies based on evolving standards. Core technologies and solutions will be developed based upon appropriate industry and standards can seamlessly integrate and interoperate with other existing systems.	*Planned*
- Develop standard configurations for operating systems and operations management software to enable homogeneity for ease of maintenance, upgrades, and patching.	*In Process*

Objective 4.2 Provide maximum availability of computer systems to examiners, attorneys, the public, and other patent and trademark offices in the event of an outage [E-Government 5].

The OCIO will provide high-availability services and continuity of operations solutions for the USPTO's mission critical systems. The importance of business continuity is amplified with the transition to the electronic processing of all patent and trademark applications. This transition is expected to be completed in FY 2005. With the migration to electronic processing of all USPTO applications, high availability of systems will be critical for minimizing the productivity impacts in the event of any serious system or data center failures.

The OCIO proposes utilizing all information technology assets and resources in its daily operations as opposed to preparing a disaster recovery site (cold site) that would only be used in the event of a failure at the primary site. The USPTO would have full utilization of all of its assets while having full confidence in its recovery capabilities in the event of a system failure or a catastrophic event affecting the data center facilities. From the business and financial perspectives, this provides a much lower cost of operations while allowing the immediate recognition and correction of problems.

The tasks that support this objective are as follows:

Tasks for Objective 4.2	Status
- Develop office automation high-availability architecture and plans; Develop high-availability architecture and plans for trademark systems; Develop high-availability architecture and plans for patent systems; Deploy server clusters for office automation systems; Deploy server clusters for trademark systems; Deploy server clusters for patent systems. The USPTO is proposing a phased implementation that will provide high availability services and continuity of operations. Application servers will be consolidated by grouping applications and services on server clusters. Application data for all of the USPTO's mission critical systems will also be consolidated onto high availability storage. Future activities include network connection and implementation of fail over capabilities for five mission critical applications. USPTO will continue to add other mission critical systems and applications to network and ensure fail over capabilities. Application data will also be available through high storage devices. This approach will enable USPTO to be fully functional for systems that are mission critical and business essential.	*In Process*
- Migrate office automation data to Storage Area Network; Migrate trademark data to SAN; Migrate patent data to SAN. SANs are an emerging technology for improving access to and management of mass storage resources. The SAN solution will (1) consolidate USPTO's existing storage resources in a powerful, intelligent storage structure to improve manageability and control management costs, (2) integrate stored data and allow maximum data sharing across diverse USPTO business applications, servers, and segments of the organization, (3) improve service levels to end users by improving the accessibility of information, (4) scale storage capacity and ensure high availability and throughput performance, (5) provide high-performance database access and transactional processing, ensuring business continuity for disaster recovery and moving data between locations, and (6) achieve maximum protection of stored data.	*In Process*
- Prototype data replication capability. The USPTO data replication proof of concept will demonstrate the disaster recovery capabilities that will be leveraged by the OCIO to deliver a high availability infrastructure. A database from a live application will be replicated (real time) to storage at a secondary site. A failure of the primary site will be simulated to review the success of the application run from the secondary site.	*In Process*

Objective 4.3 Enhance and simplify the technology infrastructure to support business operations in an electronic government environment (i.e., simplify and unify).

The USPTO e-Government strategy has been progressing with the deployment of several business-enhancing capabilities, including searching, office action creation, application capture, and electronic filing in a secure environment. Progress to date has made it possible for trademark business processes to be completed on-line by customers from start to finish. The

trademark and patent businesses will achieve end-to-end electronic business process integration in late CY 2004. Achieving these goals requires a comprehensive e-Government strategy as outlined in Goal 1 and an EA framework that enables sharing of information and services across heterogeneous environments.

To provide enhanced support for e-Government initiatives, J2EE (Java 2 Enterprise Edition) framework will serve as a building block for USPTO's EA. The OCIO may also add .NET technology as part of the USPTO EA. The J2EE and .NET frameworks will provide USPTO a flexible, extensible, and interoperable component-based application architecture. These platforms will allow applications to communicate transparently through all layers of the application model and across different platforms, and allow for growth and adaptation with minimal effect across multi-tier computing environment. With the move toward J2EE as the Enterprise Application framework, the USPTO will focus on its reuse strategy on J2EE. The objective is to provide infrastructure of consolidated servers and development tools that will be highly scalable, readily available, and promotes reuse of EA environment for all new software development efforts. At the same time, a key goal of USPTO's EA is to leverage legacy system investments while facilitating the transformation to the target EA with this approach.

The OCIO has also placed high priority in ensuring that the e-Government initiative is based on a secure environment. The IT security program at USPTO is focused on applying the "Defense in Depth" (DiD) strategy. DiD involves a multi-layered and tiered approach where many security components are combined in a comprehensive and enterprise wide security architecture. The process will establish a synergistic information assurance effect whose sum is greater assurance than is possible from individual security components.

The transition toward DiD will involve the coordinated deployment of management, operational, and technical controls that focus on people, technology, and operations. Accordingly, the OCIO supports implementation of common service systems for USPTO PKI, email, remote access, enterprise-wide logon, firewalls, routers, intrusion detection, perimeter services, and other USPTO infrastructure capabilities. These systems will help to mitigate many internal and external threats by providing around-the-clock real-time monitoring, detection, and response to intrusion. The deployment will be comprehensive to cover a spectrum of platforms used at USPTO.

The tasks that support this objective are as follows:

Tasks for Objective 4.3	Status
- Complete evaluation of .Net platform. The OCIO is currently reviewing and developing a strategy to support the Microsoft® .NET architecture. The OCIO envisions incorporating .NET Enterprise Application Integration (EAI) strategies enterprise-wide in the future.	*In Process*
- Implement comprehensive IT security architecture that is compliant with Federal guidelines and addresses IT security vulnerabilities at USPTO.	*In-Process*

Tasks for Objective 4.3	Status
- Incorporate existing and planned EA practices to focus on database and application interface integration. Exploit the capabilities of WebSphere EAI suite and the J2EE architecture to integrate database and application interface based on reuse approach.	*Planned*
- Develop IDE migration plan to consolidate development environments, Configure, and deploy an Integrated Development Environment (IDE). The USPTO has established an IDE that can support 18 concurrent Java based development efforts with the ability to scale up if necessary. The IDE will facilitate software component, architecture, and engineering reuse for the USPTO and its business partners. Moreover, it will support the USPTO e-Government strategy by providing an opportunity to unify a number of development environments that are currently deployed in support of independent AIS's. The USPTO anticipates that this unification will improve the quality of finished software products by improving the use of configuration management and testing best practices inherent in the planned deployment of the IDE.	*In Process*
- Develop "simplify and unify" plan to include server consolidation, storage consolidation, virtual private network consolidation, etc. The USPTO will simplify and unify its technology infrastructure by reducing complexity to ensure adequate availability and performance in support of business operations in an e-Government environment. Additionally, this plan will support high availability and disaster recovery, storage consolidation, database instance consolidation, and firewall design simplification.	*In Process*
- Prototype Linux cluster servers and blade servers. Linux is emerging as the operating system of the future. To reduce costs and improve security, USPTO will pilot the use of Linux based servers for network infrastructure utility functions. Mail routing, newsgroup services, and web services will be tested on lower cost Intel-based Linux servers. If the initial uses are successful and indicate a potential ability to reduce recurring operational costs while improving availability, scalability, and performance, the clustered Linux servers will be deployed to the USPTO production environment.	*In Process*
- Complete Business Impact Analysis of business continuity program. The USPTO is currently conducting a Business Impact Analysis (BIA) to determine application priorities, Recovery Point Objectives (RPOs), and Recovery Time Objectives (RTOs).	*In Process*
- Develop business continuity plans for FY 2005 initiation. In FY 2005, the OCIO will execute the data center relocation plans and will have already completed the relocation of the OCIO lab. A secondary project and associated team will be utilized to develop the necessary disaster recovery plans and then to implement the infrastructure to support disaster recovery capabilities for critical applications at the USPTO.	*Planned*

Tasks for Objective 4.3	Status
- Develop a service oriented architecture that addresses the complexity and the number of systems for standard interfaces.	

Objective 4.4 Develop interoperability standards for data exchange with international partners, dissemination of intellectual property information, and system to system communications.

The establishment of an international agreement for the electronic filing of patent applications under PCT (PCT AI Part 7 Annex F) and the adoption of the Madrid Protocol for Trademarks represent commitments from the USPTO to adopt and adapt to agreed-upon XML resources. These agreements also represent the need to implement certain aspects of XML in specified ways to ensure maximum interoperability of documents and data files between Patent and Trademark organizations. Providing an effective procedure to create, exchange, and maintain XML resources is essential to developing interoperability standards for data exchange.

An interoperability strategy will ensure that USPTO moves toward the ultimate goal of an end-to-end XML-based electronic processing system. Patent examiners should be provided with the ability to work from an integrated system that is linked to other automated information systems to enable electronic examination of applications. The electronic examination process should include capabilities for simultaneous access to and viewing of electronic applications by multiple internal users with user-friendly navigation through applications, and text search within and across applications.

The tasks that support this objective are as follows:

Tasks for Objective 4.4	Status
- Develop interoperability standards that will facilitate data exchange with international patent organizations within the USPTO's EA environment and the FEA.	*Planned*
- Collaborate with the Business Areas to ensure that the interoperability standards will support the business requirements of electronic processing.	*Planned*
- Establish an effective procedure to create, exchange, and maintain XML resources (i.e., DTDs, schemas, style sheets, and document instances).	*Planned*

STRATEGIC GOAL 5: CONTINUOUSLY IMPROVE THE DELIVERY OF OCIO INFORMATION PRODUCTS AND SERVICES TO MEET USPTO BUSINESS OBJECTIVES.

Strategic Goal 5 - Objectives
5.1. Provide high quality products and services for CIS customers that differentiate the USPTO and OCIO from other organizations.
5.2. Strategically manage our OCIO workforce to meet the challenges of today and tomorrow.
5.3. Improve USPTO capital planning and investment practices to ensure the delivery of business value from information technology investments.
5.4. Streamline LCM practices for improved performance.

The USPTO's 21st Century Strategic Plan emphasizes the importance of enhancing quality through process and workforce improvements. A capable OCIO workforce is a critical element of this effort and must be retained, recruited, trained, and rewarded to ably support the USPTO. Strengthening IT capital planning and investment practices is another important facet of the OCIO's continuous improvement efforts to not only meet established federal mandates, but to derive maximum business value from all IT investments. Finally, streamlining Life Cycle Management (LCM) practices offers a valuable opportunity for improved performance.

Objective 5.1 Provide high quality products and services for CIS customers that differentiate the USPTO and OCIO from other organizations.

The OCIO will focus on refining the capability to meet customer business needs for patent and trademark information by providing greater and more effective access to the USPTO's information dissemination products and services. The underlying approaches to improve the information dissemination products and services include: allowing customers enhanced electronic access to relevant USPTO information and services, focusing resources and functions to provide higher-quality services to customers, supporting a USPTO-wide communications and change management process with our customers, and continuing to partner with external entities to provide efficient and effective customer service.

This shift is occurring to respond to market forces driving change to the OCIO's business model, resulting in the following actions:

- **Leverage the Web to deliver CIS products and services**: Leverage the USPTO's web infrastructure to make Customer Information Services (CIS) products and services more accessible to the general public. Ensure that CIS' services (e.g. assignment recordation, document ordering, customer assistance, etc.) are accessible 24x7 through the USPTO's Website and web portal. Ensure that CIS' products (e.g. document copies, "published" documents, bulk data, etc.) can be downloaded by customers on-demand.

- **Streamline CIS product and service delivery processes:** Automate existing manual processes or eliminate unnecessary information dissemination functions. Consolidate duplicate information dissemination services functions to provide centralized, higher-quality services to customers. Transfer "non-core" functions to other USPTO business areas where applicable.

- **Focus on the customer**: Create detailed understanding of the CIS Customer Groups (e.g. general public, attorneys, data resellers, etc.) – to allow the OCIO to deliver products/services to these customer groups effectively across multiple channels (e.g. USPTO portal/Website, Public Search facilities, PTDLs, Via the 1-800#, etc.). Continue to support USPTO 21st century plan changes that will affect information dissemination products and services. Facilitate close communication internally and with external customer groups as these products and services evolve.

- **Continue to support partnerships and international programs**: Continue to support Trilateral and WIPO IT projects – and the PTDL program. Increase emphasis toward service center model, broadening the scope of the traditional depository library program to support the independent inventors and outreach programs.

The tasks that support this objective are as follows:

Tasks for Objective 5.1	**Status**
Leverage the Web to deliver CIS products and services	
- Develop a strategy for USPTO customers to conduct business online for the fulfillment of information service requests for product ordering and electronic recordation transactions.	*In Process*
- Support programs to allow access to IFW in Public / Private PAIR and over TRINET to allow for easier download and/or electronic ordering of documents.	*In Process*
- Improve ability for Customers to submit/record Assignments for Patents and Trademarks online using Electronic Trademark Assignment System (eTAS) and Electronic Patent Assignment System (ePAS).	*In Process*
- Provide better customer assistance online and Customer Complaint Management on-line through improved on-line postings, better directions for online ordering / contacting office and improved Issue Management / Resolution management capabilities.	*Planned*
Streamline CIS product and service delivery processes	
- Develop and publish CIS strategic plan that highlights how the products and services are being distinguished from other organizations, outlines a streamlined information dissemination strategy – and creates a phased implementation plan for the strategy.	*In Process*
– Leverage IFW in Office of Public Records (OPR) for quicker file location, more automated document production and enhanced document output capabilities (e.g. CD output).	*In Process*
- Consolidate / Transfer duplicate CIS functional areas: Order Fulfillment operations, CIS Call Center Operations, Search Facilities and Paper distribution/ storage facilities.	*In Process*

Tasks for Objective 5.1	Status
– Consolidate / Refine Office of Electronic Information Products (OEIP) product line based on customer usage / value to the customer: re-assess product pricing based on dissemination cost changes; simplify product line; transfer/automate production processes.	*Planned*
Focus on the customer	
- Conduct survey of current Customer Information Services (CIS) operations and customer satisfaction.	*Completed*
– Conduct and Review Customer Satisfaction Surveys to identify USPTO Website and call center strengths and weaknesses.	*In Process*
- Leverage technologies to improve newly launched "USPTO Contact Center" – to create a single point of contact for customers to access CIS services. Develop plans and implement call center technologies to provide improved Customer Assistance capabilities via the USPTO 1-800 number.	*In Process*
- Establish a CIS Program Management Office (PMO) to co-ordinate Customer Change Management processes for CIS. The PMO will manage Customer Communications processes for CIS that will allow CIS the ability to stay informed of internal process, policy or system changes – and appropriately communicate to affected customer groups. The PMO will also co-ordinate CIS' input / changes to USPTO AIS efforts for the 21st century plan on behalf of the CIS Customer Groups.	*In Process*
Continue to support partnerships and international programs	
- Continue support for the PTDL Program to improve public access to patent & trademark information. Work on transforming and enhancing Patent and Trademark Depository Library (PTDL) services.	*In Process*
- Co-ordinate OCIO input to Office for Legislative and International Affairs (OLIA) for Trilateral IT projects; review Trilateral papers and WIPO IT systems documentation. Continue participation in Trilateral and WIPO technical working groups.	*In Process*

Objective 5.2 Strategically manage our OCIO workforce to meet the challenges of today and tomorrow.

The USPTO's ability to leverage information technology to meet its business commitments rests not only on the OCIO's ability to recruit and retain qualified workers, but also on its ability to establish an inviting career path and a positive, energized work environment. The OCIO will strategically manage IT human capital to meet current and future business objectives by employing effective workforce planning and creative approaches to recruitment, retention, development, and succession planning.

The OCIO will determine critical organizational roles to fully support the mission of the USPTO, analyze potential competency and skill gaps, and develop plans to fill these gaps. The OCIO's human capital plan addresses the development of a skilled workforce. The USPTO will work

toward attracting new talent, as well as providing a desirable work environment, thus promoting retention. Employee retention problems may exist for numerous reasons including federal salary limitations, quality of work environment, increased workload, too few skilled workers to balance the workload, and lack of adequate employee recognition. The OCIO will address these challenges through effective management, increased employee accountability, and more emphasis on rewards and recognition.

The OCIO has been using the Standards, Mentor, Attempt, Review, Transition (SMART) approach as an informal development program for its employees. This program helps managers identify standards to work toward and establishes a mentoring relationship for the manager. The individual being mentored then attempts to move toward the standard through practice and training. The mentor will review the work done toward the standard and then the standard process will be transitioned/implemented. The development of OCIO employees is further enhanced by the initiatives from the OCIO Training Council and the Enterprise Training Division (ETD) within Office of Human resources.

Through the collective knowledge of the OCIO Training Council and the ETD, the OCIO supports the development of a strategically aligned FY 2004 training plan that addresses the three training areas of USPTO, supports economies of scale, and minimizes the risk of duplication. The three training areas are (1) critical technical training; (2) management/leadership training, and (3) project management training and certification. The OCIO Training Council will implement the following practices which results in more effective management of IT resources:

- Enlist executive-level champions to ensure that training strategies are incorporated into corporate decision-making and aligned with USPTO business goals.
- Involve critical stakeholders, such as senior management, business unit managers, subject matter experts, workforce development staff and end-users in planning IT training.
- Address skill gaps and future skill needs as well as new technologies as part of the planning process.

The OCIO Training Council members from each of the Executive areas, will work to:

- Ensure consistent training policies and practices throughout the OCIO.
- Support competency-based and strategically aligned training.
- Establish link between training and performance measurement results.

The OCIO Training Council members are specifically accountable for:

- Knowledge of projects within their Executive Area offices.
- Awareness of Immediate Skill Requirements.
- Consultation/Coordination with Executive Area Directors/Managers.
- Knowledge of Executive Area budget balanced/potential shortfalls.

The OCIO Training Council provides input to the ETD for preparation of the enterprise-wide training plan to support organizational and individual effectiveness, improved performance, and sustained growth of employees. Through collaboration with the OCIO Training Council and OCIO offices, the ETD provides guidance and consultation to business unit management officials in identifying competencies and training needs. In support of this effort, the OCIO Training Council, OCIO offices, and ETD perform the following responsibilities:

- Reviews and analyzes the strategic and performance goals outlined in the USPTO's 21st Century Strategic Plan to determine where training could enhance goal achievement.
- Identifies the enterprise-wide competencies required to support goal achievement.
- Identifies training needed to fill gaps and competencies in the current or projected workforce required to meet the Agency's strategic goals and assess to what degree the current and/or projected workforce possesses these competencies.
- Develops training courses and/or programs that address technical needs.
- Assures that training needs for a particular fiscal year are funded in order of priority.

The OCIO and ETD also compiles an annual listing of the OCIO major training needs that includes (1) specific types of training and developmental activities needed in priority order; (2) specific groups to receive training; and (3) training and developmental activities that are planned for the year listed in priority order.

Additionally, the OCIO will lead efforts in the federal community by participating in the Workforce and Human Capital for IT Committee and by actively contributing to government-wide initiatives. Strategies will be developed to address skill gaps, attract new talent, and provide a desirable work environment for IT employees. The OCIO will seek efficient enterprise training solutions utilizing a technical training approach (e.g., e-learning) to achieve efficiencies in development and training activities.

The tasks that support this objective are as follows:

Tasks for Objective 5.2	Status
- OCIO and ETD will compile an annual listing of the OCIO major training needs.	*Completed*
- Management/Leadership Training Tracks – The following management training program areas will be implemented beginning in FY 2004.	
- 1. Organizational/Administration: Leadership, HR Management, Strategic Planning Perspective, Government Laws and Regulations, and Organizational Plans, Policies, and Guidelines.	*Planned*
- 2. Behavioral: Coaching/Motivation/Team Building, Communication/Interpersonal, Decision-making/Influencing/Negotiating, Problem Solving, Strategic Thinking, and Quality Management/Continuous Improvement	*Planned*
- 3. Technical: Business Knowledge, Acquisitions/Contract	*Planned*

Tasks for Objective 5.2	Status
Management, Enterprise Architecture, Budget/Finance, e-Government, Knowledge Management, Performance Assessment, Capital Planning and Investment, and IT Security/Information Assurance	
- Project Management Training/Certification – Training for this area will be covered in three following steps.	
- 1. *Managing Information Technology Series*: Online overview of project management. Includes the following: USPTO IT Project Management Overview (Enterprise Architecture); Project Planning; Project Scheduling/Control and Evaluation; and Project Management and IT Security.	*Planned*
- 2. *Course Development by Subject Matter Experts*: Office of Technical Plans and Policy (OTPP) Project Management Team. Includes the following: The "Tool Box"; Overview of Project Lifecycle; Automated Project Management System (APMS) Overview; Specific tools and techniques to Get Your Job Done; and Links to templates/standards; Key contacts – Who You Need to Know.	*Planned*
- 3. *Project Manager Certification*: Seven course curriculum and Exam Prep. Courses are as follows: Managing Projects; Leadership and Management; Schedule/Cost Control; Risk Management; Quality of Project Managers; Contracts for Project Managers; Project Management Applications; and Project Management Professional Examination Prep.	*Planned*
- IT Security Training, role based training will be implemented beginning in FY 2004.	*In Process*
- Evaluate the SMART program for possible implementation throughout the OCIO.	*Planned*
- Pilot and rollout OCIO leadership competency model.	*In Process*
- Develop, pilot, and rollout results-based rewards and recognition.	*In Process*
- Conduct skills baseline and determine skills management strategies.	*Complete*
- Implement skills management strategies.	*In Process*
- Develop and run pilot certification program.	*Planned*
- Expand certification pilot program throughout OCIO.	*Planned*

Objective 5.3 Improve USPTO capital planning and investment practices to ensure the delivery of business value from information technology investments.

The OCIO will lead the USPTO in establishing IT Capital Planning and Investment Control (CPIC) practices to ensure that planning, selection, execution, and evaluation activities are in compliance with federal IT investment requirements and conducted in an open and well-documented manner. In this role, the OCIO also develops and maintains the SITP and the Operational IT Plan. The OCIO will also act as a resource to the business units, guiding and

fulfilling their requests for IT products. At the same time, the OCIO will maintain the framework on which all USPTO technology functions, positioning itself as an efficient and effective service provider as measured by the OCIO balanced scorecard.

The OCIO will continue to refine its IT CPIC process to support USPTO's mission and transition to the target enterprise architecture. As part of the IT CPIC process, we will formalize an IT investment review structure to ensure that IT investment planning, selection, execution, and evaluation activities of the USPTO are in compliance with federal IT investment requirements (e.g., Clinger-Cohen Act) and conducted in a comprehensive manner with appropriate documentation. A well-defined CPIC model will result in a more formal review process tightly coupled with the USPTO budget and performance review process. The review process will be based on an objective criterion to identify and prioritize IT investments. Another aim behind the investment review structure is to fully engage the user communities in development of IT investment business cases for proposed IT investments. User responsibility and accountability for IT investment documentation and justification is a precursor to the effective investment management of IT resources at the USPTO.

The tasks that support this objective are as follows:

Tasks for Objective 5.3	Status
- Update the OCIO CPIC Process Guide.	*In Process*
- Revise OCIO SITP format and validate with business areas.	*Completed*
- Update OCIO SITP content and validate with business areas.	*In Process*
- Develop and update OCIO Operational IT Plan.	*Completed*
- Develop OCIO balanced scorecard.	*Completed*
- Develop OCIO financial scorecard.	*In Process*
- Develop plan for improving program management capabilities.	*In Process*
- Integrate Roadmaps and Release Management into planning initiatives.	*Planned*

Objective 5.4 Streamline Life Cycle Management practices for improved performance.

The USPTO has institutionalized a mature and successful Life Cycle Management (LCM) practices for AIS's. The automated information system Life Cycle Process Tailoring Technical Standard and Guideline (TSG), has significantly contributed to the success and flexibility of the LCM. The needs of all USPTO IT projects during the life cycle of the project vary by the type of project, including system development, maintenance, and infrastructure projects. This TSG assists the Project Manager and the Software Development Manager (SDM) in determining the type of AIS project that they are managing. The current LCM approach offers a baseline recommendation of Technical Review Board (TRB) reviews and deliverables to development, by project type. This recommendation can be used as is, or as a basis for further tailoring. The current LCM processes include formal mechanisms throughout the AIS life cycle to monitor

interim results of IT projects and tailor the life cycle accordingly. The USPTO has had success with the current LCM in delivering quality applications when promised.

As the development environment evolves, the LCM will be enhanced to ensure that lifecycle management process continues to produce applications that fulfill the business needs of USPTO. The LCM will be further developed to accommodate the need for multiple development approaches, support the increasingly diverse nature of technical solutions and infrastructure environments, and maintain an environment for stronger collaborative working relationships with OCIO's customers and partners as they take on a more active role in the solution engineering process.

The improvement of LCM involves two approaches. First, the LCM will be streamlined for immediate results, and second, the USPTO will be transitioned to advanced LCM practices. The OCIO will work to streamline the LCM policies, procedures, roles, and responsibilities governing the initiation, definition, design, development, deployment, operation, maintenance, management, and retirement of AIS. The LCM objectives are as follows:

- Reduce the amount of documentation.
- Increase the value of artifacts.
- Increase the quality of artifacts.
- Ensure artifact development as an inherent part of the development, not an after-the-fact recording activity.
- Increase the ease of maintenance of artifacts.
- Shorten the development lifecycle.
- Increase the level of tool support for the development process.
- Decrease the burden of the formal review and approval processes on the project.
- Increase the value of the reviews and approvals.
- Provide greater flexibility in methods to accommodate different project types.
- Migrate from paper based system documents to electronic models.

The strategic direction that will allow the USPTO to implement advanced LCM processes are based on adoption of proven development methods and toolsets, including object-oriented design, Rational Unified Process (RUP), Unified Modeling Language (UML) notation, XML, and iterative development and model-drive architecture methods. This strategic direction and engineering practices are founded on strategic enterprise architectures, service oriented architectures, component-based development, asset-based development, iterative development within release management, portfolio and operations insight, model-driven development, and integrated toolsets. In addition, there will be continuous improvement of processes and standards compared to one-time approach to process definition. Industry methodologies, standards, and best practices will also be leveraged. The LCM updates will be aligned with the strategic direction and priorities of the USPTO and the OCIO, ensuring achievability of specified practices within the realities of USPTO environments and workforce capabilities.

The OCIO focus is to extend LCM to provide project managers and system development managers with a system life cycle that best fits the particular needs for application development. The LCM phases may be tailored to accommodate the unique aspects of an AIS or infrastructure system project as long as the resulting approach will deliver a quality system. Ultimately, the revised LCM approach will deliver quality systems that: 1) meet or exceed customer expectations, 2) work effectively and efficiently within the current and planned information technology infrastructure, and 3) are inexpensive to maintain and cost-effective to enhance.

The tasks that support this objective are as follows:

Tasks for Objective 5.4	Status
Phase I	
- Access current LCM and organizational change readiness.	*In Process*
- Streamline existing LCM processes and documentation.	*Planned*
- Define strategic direction for advanced lifecycle management and solution engineering practices.	*In Process*
- Develop initial strategies for advanced practices.	*In Process*
- Pilot selected aspects of strategies.	*Planned*
- Capture lessons learned from pilots.	*Planned*
- Implementation of streamlined LCM practices and of strategic direction practices.	*Planned*
- Identify implementation partners and internal champions of change.	*Planned*
- Secure sponsorship, funding, and resources.	*Planned*
Phase II	
- Streamline existing LCM processes and documents.	*Planned*
- Strengthen LCM disciplines.	*Planned*
- Implement Enabling tools infrastructure.	*Planned*
- Replace paper-based artifacts with electronic model artifacts.	*Planned*
- Develop workforce competencies.	*Planned*
- Implement advanced strategic practices.	*Planned*
- Evaluate results.	*Planned*
Phase III	
- Refine strategies and practices.	*Planned*
- Mature all practices.	*Planned*

Tasks for Objective 5.4	Status
- Formulate strategies for implementation of the solutions architecture within LCM. Solutions architecture will have optimal value in system design and development that will support the LCM requirements. This architecture should help define the technologies necessary to support the USPTO mission, transitional processes for implementing new technologies in response to changing information needs (legacy systems), and support a more robust LCM process.	*Planned*
- Modify the LCM to reflect the updated EA. The LCM methodology for USPTO is being changed so that the system lifecycle management processes are aligned with the current version of the UEA.	*In Process*

CONCLUSION

The next five years will be a period of significant technological advancement in the economy, challenging the USPTO to deliver services that meet the evolving business needs of its customers. The Strategic Information Technology Plan provides the broad roadmap for meeting that challenge via specific information technology activities from fiscal years 2004 to 2009. By the end of this period, the OCIO's internal and external customers will interface with a quality-focused, highly productive, responsive organization meeting and exceeding customer requirements through continuous progress.

In the near-term, FY 2004 and FY 2005, the OCIO will continue to develop and deploy e-Government applications including Patent Image File Wrapper, Trademark Trial and Appeal Board Information System, and the Trademark Information System, Madrid Protocol, reducing reliance upon, and in some cases eliminating, inefficient paper processes. The OCIO will continue to fully develop the USPTO Enterprise Architecture planning documents, improve Life Cycle Management methodologies, strengthen IT security, and implement key initiatives within the target architecture, to simplify and achieve greater efficiencies. The OCIO will also conduct the transition of information technology resources during the move the Alexandria Headquarters providing ongoing services to internal and external customers.

During FY 2006 and FY 2007, the OCIO will further implement and enhance e-Government applications with a focus on improved internal operations and systems integration. Over this period, the OCIO will have implemented much of the infrastructure changes dictated by the Federal Enterprise Architecture, particularly relating to data storage and the high availability architecture. The move to the Alexandria Headquarters will also be complete.

In the long-term, FY 2008 and FY 2009, the OCIO will fully integrate e-Government applications with internal business systems, while eliminating redundancy and overlap, and maximizing system and business process efficiency. The protection of U.S. intellectual property data will also be fully realized with a robust business continuity program.

These long-term pursuits will result in an integrated customer-facing government-to-business and government-to-citizen e-Government approach that brings the USPTO closer to its customers and stakeholders. Like any long term strategic plan, the OCIO SITP will need to be reviewed and enhanced as results are achieved and new challenges are presented.

APPENDIX – ACRONYMS

Acronym	Meaning
AIS	Automated Information System
APMS	Automated Project Management System
BIA	Business Impact Analysis
BPAI	Board of Patent Appeals and Interferences Information System
BPAIIS	Board of Patent Appeals and Interferences Information System
BRM	Business Reference Model
C&A	Certification and Accreditation
CFS	Core Financial System
CIS	Customer Information Services
COTS	Commercial Off-the-Shelf (applications)
CPIC	Capital Planning and Investment Control
DHCP	Dynamic Host Configuration Protocol
DiD	Defense in Depth
DNS	Domain Naming Service
DRM	Data Reference Model
DTDs	Document Type Definitions
EA	Enterprise Architecture
EAI	Enterprise Application Integration
eComm	Electronic Commerce Portal
e-Commerce	Electronic Commerce
eDAN	Electronic Desktop Application Navigator
EDS	Enterprise Directory Services
EDW	Enterprise Data Warehouse
EFP	Electronic Filing Partnership
EFS	Electronic Filing System
EFS-ABX	Electronic Filing System – Application Body eXtensible Markup Language authoring tool
e-Gov	Electronic Government
ePAS	Electronic Patent Assignment System on the Web
EPO	European Patent Office
ESTTA	Electronic System for Trademark Trials and Appeals
eTAS	Electronic Trademark Assignment System on the Web
ETC	Emerging Technology Center
ETD	Enterprise Training Division
FAST	First Action System for Trademarks
FEA	Federal Enterprise Architecture
FICC	Federal Identity Credentialing Committee
FISMA	Federal Information Security Management Act
HLA	High Level Architecture
IDE	Integrated Development Environment
IFW	Image File Wrapper
IPA	Internet Purchasing Application

APPENDIX – ACRONYMS

Acronym	Meaning
IRB	Investment Review Board
IT	Information Technology
J2EE	Java 2 Enterprise Edition
JPO	Japan Patent Office
LCM	Life Cycle Management
MARS	Machine Assisted Reference Section
MiTEAS	Madrid International Trademark Electronic Application Submission
NOCC	Network Operations Control Center
NPL	Non Patent Literature
OCIO	Office of the Chief Information Officer
OEIP	Office of Electronic Information Products
OLIA	Office for Legislative and International Affairs
OMB	Office of Management and Budget
OPR	Office of Public Records
OTPP	Office of Technical Plans and Policy
PAIR	Patent Application Information Retrieval system
PALM	Patent Application Location Monitoring system
PASAT	Patent Application Specification Authoring Tool
PBX	Private Branch Exchange
PCT	Patent Cooperation Treaty
PD	Procurement Desktop
PDF	Portable Document Format
PEAI	Patent Enterprise Access Integration
PGPub	Pre-Grant Publication
PKI	Public Key Infrastructure
PMO	Program Management Office
POIS	Patent Cooperation Treaty Operations Imaging System
POWER	Patent Cooperation Treaty Operations Workflow and Electronic Review
PRM	Performance Reference Model
PSIPS	Public Site for Issued and Published Sequences
PSTN	Public Switched Telephone Network
PTDL	Patent and Trademark Depository Library
RAM	Revenue Accounting and Management System
REPS	Re-examination Processing System
RPO	Recovery Point Objective
RTO	Recovery Time Objective
RUP	Rational Unified Process
SAFE	Secure Application Filed Electronically
SAN	Storage Area Network
SDM	System Development Manager
SEAS	Secure Environment Access Solution

APPENDIX – ACRONYMS

Acronym	Meaning
SITP	Strategic Information Technology Plan
SMART	Standards, Mentor, Attempt, Review, Transition
SRM	Service Reference Model
TEAS	Trademark Electronic Application Submission
TIS	Trademark Information System
TPostal	Trademark Postal System
TRB	Technical Review Board
TRM	Technical Reference Model
TSG	Technology Standard and Guideline
TTAB	Trademark Trial and Appeal Board
TTABIS	Trademark Trial and Appeal Board Information System
TW@H	Trademark Work-at-Home
UEA	USPTO Enterprise Architecture
UML	Unified Modeling Language
US	United States
USPS	United States Postal Service
USPTO	United States Patent and Trademark Office
WINS	Windows Internet Naming Service
WIPO	World International Property Organization
XML	eXtensible Markup Language