

SCIT.ATR.PI.2002.US

Annual Technical Report 2002 on Patent Information Activities submitted by United States of America (SCIT/ATR/PI/2002/US)

Where URLs are requested below, it is preferred that either URLs which are likely to remain stable over time (three years or more) are provided, or home (main) page URLs are provided with a short explanation of how to access the corresponding information.

The term "patent" covers utility models and Supplementary Protection Certificates (SPCs). Offices which issue design patents should report their design patent information activities in their Annual Technical Reports on Industrial Design Information Activities.

I. Evolution of patent activities

Changes experienced in terms of application filings and grants with respect to the previous year

In calendar year (CY) 2002, the United States Patent and Trademark Office (USPTO) granted 167,334 utility patents, an increase of 0.8 percent over the number of grants for CY 2001. The share of grants having foreign origin, as determined by the residence of the first-named inventor, was 48.0 percent for CY 2002, up from 47.2 percent for CY 2001. The top four patenting organizations for CY 2002 are International Business Machines Corporation receiving 3,288 utility patents, Canon Kabushiki Kaisha receiving 1,893 utility patents, Micron Technology, Inc. receiving 1,833 utility patents, and NEC Corporation receiving 1,821 utility patents.

There were 334,445 utility patent applications filed at the USPTO in CY 2002, a 2.4 percent increase as compared to CY 2001. The share of applications having foreign origin, as determined by the residence of the first-named inventor, is 44.9 percent, down from 45.6 percent for CY 2001.

Trends or areas experiencing rapid changes with respect to the previous year

In calendar year 2002, the following active technology areas showed large increases in utility patent activity as compared to CY 2001: 'Data Processing: Measuring, Calibrating, or Testing' (up 66 percent), 'Wave Transmission Lines and Networks' (up 53 percent), 'Data Processing: Design and Analysis of Circuit or Semiconductor Mask' (up 35 percent), 'Data Processing: Database and File Management or Data Structures' (up 32 percent), and 'Electricity: Measuring and Testing' (up 29 percent).

II. Matters concerning the generation, reproduction, distribution and use of primary and secondary sources of patent information

Publishing, printing, copying (main types of publications of the office in the field of patent information, etc.)

The USPTO ceased printing a paper Patent Official Gazette with the last issue of September 2002. An electronic Gazette in the same format is available on the Internet and CD. This change resulted in a net saving of over \$2 million annually.

The USPTO continues in the publication of Pre-Grant utility and plant applications started in March 2001 as a result of Congressional Legislation. Documents are not printed, but are made available on the Internet in a searchable form and as images in a format similar to the current patent grant document. A paper copy of the file contents can be obtained from the PTO. A total of 199,017 Pre-Grant Documents were published in 2002.

Main types of announcements of the Office in the field of patent information

A wide variety of announcements and notices are provided on a weekly basis in the Official Gazette of the USPTO. The first issue each year presents a consolidated listing of the more important notices and rule changes published in the Official Gazette since July 1, 1964. PCT information, notices of maintenance fees payable and notices of expiration of patents due to failure to pay maintenance fees are among the notices provided on a weekly basis.

Mass storage media used (paper, microforms, optical storage, etc.)

In 1998, the USPTO established an Internet database with access to the full-text and images of patents from 1976 forward, consisting of two terabytes of full-page images and 120GB of searchable full-text. In 2000, the USPTO acquired an additional 2 terabytes of storage and added images of all US patents from 1790 through 1975. Presently, almost four terabytes of full-page image data for all patents from 1790 to the present is stored on these devices at the USPTO and accessible from the Internet, along with 200GB of patent numbers and current US classifications for all patents from 1790 through 1975, as well as searchable full-text for all patents from 1976 to the present. In addition, 4.5 terabytes of storage have been deployed for patent pre-grant data (PGPub). The PGPub storage is needed to meet legislative mandates issued in 1998, in the American Inventor Protection Act (AIPA), which requires the timely granting of patents and the early publication of applications.

Each year the USPTO produces nearly 200 Cassis optical disc masters containing a wide variety of patent and trademark information. Production includes four patent text products, two patent image products, one consolidated trademark text product, and one trademark image product. Over 76,000 discs per year are sold to the public, distributed to intellectual property offices around the world, and are made available for use at no charge in PTDs and the USPTO search facilities. An additional 56,000 discs are distributed each year to Federal Depository Libraries directly from the Government Printing Office.

The USAPat back file, 1790 through 1999, was completed on schedule in October 2002. The entire back file is held on a collection of 423 DVD-ROM discs, less than expected. The USPTO has approximately 200 customers for the back file collection. Distribution was made in installment sets of 50 discs each.

A new optical disc product, the electronic Official Gazette of the U.S. Patent and Trademark Office – Patents (eOG:P), was introduced in July 2002 on both the USPTO Web site (free) and on CD-ROM (subscription). The paper version of the Official Gazette of the U.S. Patent and Trademark Office – Patents and the eOG:P were published concurrently until September 24, 2002, when publication of the paper version ceased.

Exchange data products for other IP Offices and commercial customers consisting of image data and XML files are currently being produced on a combination of IBM 3480 tape cartridges and Digital Linear Tape (DLT). By the end of 2002, production of 3480 tapes was discontinued and all products have been delivered on DLT from that point forward.

Word processing and office automation

Office Action Correspondence Subsystem (OACS)

The Office Action Correspondence Subsystem (OACS) was introduced in August 1999. OACS utilizes Visual Basic command language integrated within Microsoft Office 2000 to facilitate creation of written correspondence for both domestic and international applications. Examiners now have a standardized interface to create domestic application actions, including word processing created correspondence, and standard USPTO forms with text editable data entry fields. The interface allows creation of international application correspondence, including PCT forms with text editable data entry fields. OACS is also integrated with PALM for extraction of bibliographic data into both the appropriate correspondence element and also into a separately created, local structured records management Microsoft Access database. OACS also retrieves data from BRS to automate the citation of references. OACS also provides a new multi-user "Post and Review" document editing facility that allows users to post documents to other users for review; the reviewers can make changes that are saved in the originators' files. Additional enhancements relating to TEAM systems cooperation and performance improvements are planned.

Patent Application Capture and Review System (PACR)

The PACR system first came into existence in 1997 to replace the aging microfiche system used to capture initially-filed application papers. In subsequent years, it was expanded to support interfaces to PALM, indexing of application processing, OCR, complete security review processing, and support of OEMS and PreGrant publication. PACR version 4.0 was deployed in support of IFW on June 30, 2003. The highlights of this PACR release are the new web-based Classification Security Review (CSR) and License and Review System (LARS) modules in support of initial classification and all stages of national security review of new applications scanned in IFW.

CSR streamlines the initial classification and first-level security review processes into one new user interface. The LARS system provides the application images to L&R examiners to perform second-level security review and allowing examiners to clear an application for foreign filing license or refer it to a DOD agency for third-level security review. PACR now has a new facility to write applications referred for third-level security review to a CD-R. CSR and LARS both use new PALM services so any security or classification changes update the PALM database immediately.

PACR 4.0 utilizes the images captured by the new IFW scanning system. PACR continues to support PGPClass, Pre-Grant Publication, and printing of certified copies OEMS.

PCT Operations Workflow and Electronic Review (POWER)

POWER supports the administrative processing of PCT applications and related documents by the staff of PCT Operations. Using the electronic application images provided by POIS (see below), POWER conducts automated formalities review of this data, prepares drafts of necessary correspondence and electronically routes the application to the next available paralegal specialist. Via the user interface screens, the paralegal specialist confirms or rejects the system's indication of errors and completes any necessary correspondence. Based on pre-programmed business rules, the system automatically routes the electronic file to the next work step. If the applicant has requested that the USPTO prepare a certified copy of the priority document, an order is forwarded to the OEMS system at the appropriate time. The workflow subsystem tracks correspondence to which a response is expected and prompts user review if the response is overdue. POWER also updates PALM with any data changes, provides management reporting, and allows for exception processing as needed. All new international applications are processed by the POWER system.

PCT Operations Imaging System (POIS)

POIS supports POWER, the PCT Operations Workflow and Electronic Review system, by providing image capture, key entry of bibliographic data, and security review processing of PCT international applications. An automated first-level security review module reviews an OCR'ed version of the contents of the application searching for terms and phrases of national security interest. Such applications are referred to the Licensing and Review System where L&R examiner perform a second-level security review.

In FY04, the essential functionality of POWER and POIS will be taken over by IFW and PALM.

Image File Wrapper (IFW) (formerly Tools for Electronic Application Management (TEAM))

In support of its Patents Automation objectives, the United States Patent and Trademark Office plans to deliver an operational system to process

patent applications electronically in image format by October 1, 2004, including electronic image capture of all incoming and outgoing paper documents. Implementing the European Patent Office's (EPO) ePhoenix system to capture all new applications in image format and create image file wrappers in fiscal year 2003 was the first step in achieving this goal.

By leveraging the ePhoenix system, the USPTO has an opportunity to pursue collaborative information technology development with the EPO. The Patents Automation development approach uses the EPO's ePhoenix system as the central component to provide an end-to-end electronic patent application-processing pipeline.

It is critical that we move toward conducting business in a completely electronic environment. The use of the ePhoenix system allowed the USPTO to accelerate its transition to a completely electronic environment. This strategy is likely to increase the return on investment and the net present value from the original TEAM development approach.

A major Patent e-Gov milestone was achieved when the USPTO successfully began deploying the first release of the ePhoenix system to the Patent Corp on June 30, 2003. The following functionality was available in the first release:

- The central scanning facility and subsystem was in full operation
- All incoming new applications are scanned into the ePhoenix system
- Backfile applications are scanned into ePhoenix according to the planned sequence for the Technology Centers (TCs) moving to the Carlyle Campus.
- Follow-on papers for both new and backfile Patent applications are scanned into ePhoenix.
- Existing Patent Application Capture and Review (PACR) images, captured since 1997, are available via ePhoenix.

Since June 30, 2003, all newly filed patent applications at the USPTO are being converted to electronic applications and processed electronically. Additionally over the next 15 months, the USPTO will scan more than a half million pending applications into the electronic system. The new electronic processing system is called the Image File Wrapper (IFW). The IFW electronic file is now the official file for all purposes. The prototype of ePhoenix at the USPTO began in December 2002 and ended with the production deployment on June 30, 2003. Included were EPO's ePhoenix and epoScan components for scanning, indexing, application management, and messaging. In parallel with the prototype, the USPTO modified its examiner client interface electronic Desktop Application Navigator (eDAN) already under development, to interface with ePhoenix in addition to the USPTO legacy systems. As part of the prototype, electronic Desktop Application Navigator (eDAN) was provided to USPTO examiners to supplement the ePhoenix MADRAS client.

The USPTO will take delivery of the first portion of its new Alexandria campus (Carlyle) in the first quarter of fiscal year 2004. As the USPTO operations are split between two campuses, the movement of papers and paper application files will become increasingly more difficult to manage and the cost associated with paper handling will increase dramatically. The use of the ePhoenix system by examiners will be phased in with the planned move sequence for the TCs moving to the Carlyle Campus beginning in December 2003, with full deployment completed no later than October 1, 2004.

In order to meet and overcome these operational challenges, the USPTO will capture pending back files in order to eliminate the need to move paper to the new campus. The ePhoenix system will be integrated with the USPTO legacy systems to provide functionality that is unique to the USPTO business process. The integration of ePhoenix into the USPTO environment will be in phased releases, building functionality incrementally to better manage implementation risk and increase productivity benefits of the project. The major functional elements include: electronic filing partnerships (EFPs), image file wrapper management using ePhoenix, workflow capability using the ePhoenix messaging function, and integration of existing major USPTO automated information systems (such as PALM and OACS) using Enterprise Application Integration (EAI) technology.

The USPTO will continue to collaborate with the EPO to support e-filing and future processing of patent applications in XML format using the EPO's ePhoenix system.

Search Systems

Examiners have access to two search clients, both of which provide text and image search and display capabilities. One is a browser-based client called WEST (Web-based Examiner Search Tool); the other is a coded client called EAST (Examiner Automated Search Tool). WEST is designed for ease of use and rapid deployment of new functionality. EAST has a more complex interface, designed for greater user customization, more rapid retrieval of images, and greater use of the keyboard. Through these search clients, all USPTO patent examiners have access to full U.S. patent images from 1790 and full U.S. patent text search from 1920. The 1920-1970 segment of the U.S. database is the U.S. Patents OCR database. Access to another segment of the U.S. Patents OCR database covering the period from 1790 to 1919 is planned for 2004. Since the introduction of U.S. Published Applications in March 2001, the full text and images of these documents have been made available. Also available are the contents of the First Page DataBase (FPDB) project, IBM Technical Disclosure Bulletins, and Derwent's World Patents Index (WPI) abstracts. The FPDB consists of the English-language Patent Abstracts of Japan (PAJ) from 1976, and their associated clipped images, and five European Patent Office (EPO) member states (EPO patent documents, France, Germany, Great Britain and Switzerland), and WIPO patent documents (PCT Publications), from 1978. Additionally, examiners have access to full patent document images from 1920 for these same intellectual property authoring countries and organizations. The addition of full English-language text of EPO documents and full patent document images for additional intellectual property countries and organizations are planned.

In 1990, the USPTO began implementation of a set of "Sequence Rules". The Rules require patent applicants who file applications disclosing amino acid and nucleotide sequence information to include a submission of the sequence information in computer readable form (CRF) in a predefined, uniform format (37 CFR §§ 1.821-1.825). On September 8, 2000, the Rules were revised to allow submissions of sequences and associated information on compact discs.

The sequence submission requirement not only facilitates the examination of biotechnology-related patent applications, but also allows the USPTO to compile databases, i.e., Pending, Published, and Issued, of sequence information disclosed in US patent applications, pre-grant publications, and patent grants. As specified in the Rules, the patent applicant creates the CRF comprising the sequence information and submits the CRF to the USPTO's Scientific and Technical Information Center (STIC), which receives and evaluates each sequence submission to assess compliance with the technical requirements for format and validity, as well as compliance with the Sequence Rules. Once the submission is verified as being error-free, according to the Rules, the data are converted into a format compatible with the Automated Biotechnology Sequence Search (ABSS) system, the USPTO sequence search system managed by the Search and Information Resources Administration (SIRA) and the Office of the Chief Information Officer (OCIO), and are then loaded into the Pending sequence database. Examiners and STIC staff may use the sequence information for prior art, double patenting and interference searches and other analyses. The USPTO retains a copy of applicants' original CRF submission for inclusion in a permanent archive.

The USPTO relies heavily on nucleic acid (i.e., DNA, RNA) and amino acid (i.e., protein) sequence information supplied in biotechnology patent applications. This information is used to assess whether the claimed invention complies with the statutory requirements of utility, novelty, non-obviousness, and provides an enabling disclosure of the technology behind the invention. As well as internal USPTO databases, claimed sequences are searched against publicly available nucleotide and amino acid databases for relevant prior art and other information. The USPTO keeps pace with the rapid expansion in sequence information filings by continuing to enhance the ABSS system. The ABSS system comprises a

network of Sun Microsystems hardware and Compugen Bioaccelerators, which utilize the Smith-Waterman algorithm. Databases included in searches performed by the ABSS system are: EMBL, GenBank, Genseq, Swiss-Prot, PIR, and SPTREMBL, as well as Pending, Published, and Issued.

More than 20 users, STIC searching staff and some biotechnology examiners, can access the ABSS system 24 hours per day, seven days per week. The searching staff performs searches on behalf of more than 400 examiners from Technology Centers 1600 and 1700. From October 1, 2001, to September 30, 2002, over 21,000-sequence listing CRFs were received from applicants and nearly 11,000-sequence searches were conducted.

(New) techniques used for the generation of patent information (printing, recording, photocomposing, etc.)

There are no new developments to report for calendar year 2002.

III. Matters concerning abstracting, classifying, reclassifying and indexing of technical information contained in patent documents

Abstracting, reviewing, translating

Abstracting

The Scientific and Technical Information Center (STIC) does not abstract technical information from patent documents.

Reviewing, Translating

STIC's translators and translation contractors provide full or partial English-language versions of patent documents upon request by USPTO staff. The annual workload in FY2001 was over thirteen million written words, the majority of which are Japanese, German, and French. In addition, the translation staff reviews with examiners the general contents of patent documents and provides partial oral translations prior to or in place of written translations. Human-edited machine-assisted translations for Japanese patents issued since 1993 are being provided to examiners as a method of improving translation turnaround time and controlling costs.

Classification and reclassification activities; Classification system used, e.g., International Patent Classification (IPC), other classification (please indicate whether or not patent documents are classified by your Office and, if so, which classification is used)

In 2002, approximately 60,082 patent documents were reclassified and 1,116 new subclasses were established in 15 classes in the US Patent Classification (USPC) system. Of this total 1,756 were non-United States patent documents and approximately 58,236 were United States patent original or cross-reference classifications. Also, in 2002 approximately 3,948 Pre Grant Publications were reclassified.

The Classification Data Systems automated classification desktop tool was deployed to additional classifiers and examiners in 2002. The system is used by classifiers and examiners to create new classification schemes and associated reference materials for the USPC, and to reclassify patent documents into the new scheme.

Foreign Patent Classification (FPC) - The USPTO continued to develop automated systems and processes to assist with the classification of non-US patent documents by USPC. A statistically based concordance has been developed between the USPC and the EPO's ECLA classification system that derives data from US patents classified in both classification systems. Work has begun on a similar concordance between USPC and the JPO's FI classification system. The USPTO continued to test linguistic tools, namely, the USPTO's text search engine and query-by-example (QBE) technology to further assist with the classification of the documents. Non-US patent documents that have USPC codes can be retrieved by those classifications using the Examiner electronic search systems "EAST" and "WEST".

All utility patents issued in 2002 include both a US Patent Classification designation and an International Patent Classification designation. The electronic search systems "EAST" and "WEST" available within the PTO and at selected Patent and Trademark Depository Libraries provide the capacity for searching US Patent documents with either a US or IPC classification designation.

In 2002 the USPTO continued to maintain a concordance between the United States Patent Classification System and the International Patent Classification system.

Further information about the use of the US Patent Classification System is available at:
<http://www.uspto.gov/web/menu/pats.html>

Coordinate indexing (domestic deep indexing systems, keyword indexing)

No new activities have been initiated under this topic.

Hybrid system indexing

No new activities have been initiated under this topic.

Bibliographic data and full-text processing for search purposes

Patent search capabilities provide text search of US Patents, JPO and EPO abstracts, Derwent's World Patent Index Database and IBM's Technical Disclosure Bulletins. As of March 15, 2001, the system also provides full-text search capability for the newly established 18-month publication of US Patent Applications (PGPub). Since October 2001, the system has provided access to the OCR text of US Patents issued between 1920 and 1971. All these documents have corresponding images available for review by examiners. Examiners find relevant documents by text searching the "dirty" OCR file, but will use the document images to determine applicability to applications under review. Because of the difference in quality between this file, and the other full text files, they are not searchable together.

IV. Search file establishment and upkeep

File building

The Examiners' Search File is continually updated to ensure that the file is complete and current. The US patent documents granted each week are processed and added to the Search File. In 2002, an average of 2,082 US patents were issued each week and were added to the Search file; an average of 10,151 original and cross reference codes associated with those documents were additionally added to the Search File each week. Also, the Pre Grant Publications are processed each week and added to the Search File. In 2002, an average 3,756 Pre Grant Publications were issued each week and an average of 7,897 primary and secondary classification codes associated with those documents were added to the Search File each week.

OCR File

The USPTO has used OCR software to convert images of approximately 166,000 US patents issued between 1970 and 1976 missing from the current text file. It has also converted the US Patent backfile from 1970 to 1790, which is approximately 3.9 million additional documents. Work has been completed to load the converted text into the USPTO search engine, BRS/Search, for access via the search clients EAST and WEST. The load of the U.S. Patent OCR database is being implemented in two segments. One segment covers the time period 1790 to 1919, while the other segment covers the time period 1920 to 1971. Initial deployment of the OCR database was in WEST, covering data from 1920 to 1970, in October 2001. Access through the EAST search client was implemented in January 2002. Providing access to the segment for the time period 1790 to 1919 is being planned in conjunction with the implementation of new system architecture in 2004.

NPL

USPTO examiners have desktop access to over 6,000 journals in electronic format as well as several thousand electronic books. Such services as the IEEE/IEE Xplore and the ACM Digital Library are also widely used by examiners in the electrical arts.

Non-US Patents

The USPTO has undertaken a goal of providing real-time access to patent documents of international Intellectual Property Offices to the Examining Corps, Partnership Patent and Trademark Depository Libraries, and Public Search Room users. Because of the volume of global patent documents, priority has been given to providing access to PCT Minimum (PCT Article 34) patent documents first.

JPO and EPO patent full images commensurate with the text searchable files (currently through May 2003) associated with the Trilateral First Page Database Project have been loaded to magnetic storage devices and made available to examiners through EAST and WEST. Additional JPO and EPO patent full images have been loaded to magnetic storage devices and made available through FPAS (Foreign Patent Access System) and the Foreign Document Retrieval capabilities of WEST.

Updating

The Electronic Search File is continually updated to ensure that the file is complete and current. The US patent documents granted each week are processed and added to the database, along with associated classification information. In 2002, an average of 5,838 US patent documents (US patents and Pre Grant publications) were published each week and an average of 18,048 classification codes associated with these documents were added to the database each week.

During 2001, the Index to the US Patent Classification system was expanded to include several hundred new terms relating to US classes and subclasses for business method technologies.

Storage, including mass storage media

In FY 1997 and FY 1998, the USPTO installed 42 terabytes of Redundant Arrays of Independent Disk (RAID) magnetic disk storage systems to process patent, trademark, and other business data electronically. In FY 1999 through FY 2001 additional capacity was acquired that doubled the amount of online magnetic storage available. The USPTO is continuing its partnership with EMC Corporation for server attached and Storage Area Network (SAN) storage devices. With a long-term lease agreement, the USPTO will acquire over 400 TB of raw disk capacity by FY 2004. Managing this storage will require continued vendor support, and implementation of storage management tools. In FY 2004 and FY 2005 the USPTO will extend the SAN to support the agency move to Carlyle and to enhance disaster recovery capabilities.

Documentation from other offices maintained and/or considered part of the available search file

The US Patent and Trademark Office receives, by means of exchange agreements, the patent documents of most countries of the world. The European Patent Office (EPO) provides the predominant number of patent documents for the majority of countries in accordance with WIPO exchange standards (WIPO ST.33 and ST.40). The USPTO has implemented production software to load these patent documents to magnetic storage devices. Other countries, which provide independent exchange to the USPTO in compliance with the noted WIPO exchange standards, are also loaded to magnetic storage devices. These patent documents are available on the USPTO network through examiner search tools EAST and WEST. A number of countries, which provide independent exchange to the USPTO on CD-ROMs and/or DVD-ROMs but not in compliance with the WIPO exchange standards, are utilized in the Scientific and Technical Information Center (STIC) at a stand-alone workstation utilizing the source countries' software for viewing and printing the patent documents when requested. STIC staff is making increasing use of the Internet sites created and maintained by national patent offices and multinational patent organizations.

The USPTO has undertaken an effort to assign USPC classifications to foreign patent documents, thereby facilitating electronic retrieval of the full document facsimile images through classified search techniques. A preferred foreign patent document from each patent family will be identified for inclusion in the foreign patent electronic database for retrieval using USPTO search tools. This effort includes: the development of concordances to the EPO's ECLA and the JPO's Facet Index (FI) and F-term classification systems via statistical techniques, the use of computational linguistics for assignment of USPC classifications, and examiner refinement of the applied USPC classifications. A pilot of the foreign patent classification effort for non-Japanese foreign patents was initiated in August 2000. Efforts to extend the above techniques to Japanese foreign patents are currently underway. The initial phase of this project added the capability to search foreign patents by USPC to the examiner search tools, and loaded over five million foreign patent USPC legacy records. Subsequent phases currently being planned involve the use of patent family information to eliminate the retrieval of duplicates when searching multiple electronic patent databases, and automated language translation capability.

The USPTO's Data Maintenance operation and staff is responsible for all text and image data load processes and maintenance of both domestic and foreign patent data. The staff performs the data loading and maintenance of both text and image data for the following foreign databases: Global Patent First Page Information Data Load, ScienceServer Elsevier Data Load, Foreign Image Data Load (EPO/JPO Full Image Data, DOCDB, ECLA, JPO F-Term/Guidance Table, JPO F-Term Manual).

V. Activities in the field of computerized and other mechanized search systems

In-house systems (online/offline)

The USPTO continues to add new data sources to its search systems. Agreements are being worked out with EPO for their full text database, as well as other countries, but budget issues may delay making the data available to examiners.

The USPTO has continued the development and deployment of patent and trademark search systems as reported in previous years. The USPTO's automation program is described in the Strategic Information Technology Plan, which is updated annually.

As described in previous reports, the on-line text search system is used by examiners, classifiers, and the public. In 1997, a COTS (commercial off-the-shelf) product from OpenText, Inc., BRS/Search, was selected as the replacement system for the CAS-owned Messenger search system. It was installed in October 1999.

Patent Document Image Retrieval System

Examiners have access to the text and images of US, JPO, and EPO patents, Derwent abstracts, US published applications and IBM technical disclosure bulletins through a browser-based client called WEST and a coded client called EAST. WEST is designed for ease of use, and rapid deployment of new functionality. EAST has a more complex interface, designed for greater user customization, more rapid retrieval of images, and greater use of the keyboard. WEST was deployed in May 1998, and EAST was deployed in August of 1999.

EAST was upgraded several times in FY 2000 to provide rapid improvements and increased functionality in order to ease the transition of examiners from the legacy Messenger-based tools. In FY 2001, PGPub data was deployed. Future enhancements to EAST will be to deploy all OCR data back to 1790 in FY 2003. EAST will also provide increased access to foreign patent images. Continuing system performance upgrades and integration with other examiner automated systems are also planned for future releases of EAST.

In June 2000, WEST 2.0 was deployed, offering foreign patent searching by USPC, patent classification searching in Manual of Classification order, customizable display formats and a host of other enhancements. Future planned enhancements include: deployment of OCR back file to 1790, support to browsers other than Netscape, and IPC search capability.

In October 2000, the patent database on the Web was expanded to include additional U.S. patent image data back to 1790 and other ancillary documents. The patent image data can be accessed by a class/subclass search or by patent number. In FY 2001, the Internet began electronically publishing for Pre-Grant Publication (PGPub) patent applications. Biosequence repository data will be available in FY 2002. In FY 2003, assignment data will be added to the website. Beginning in FY 2004 and completing in FY 2008, perfection of backfile data will be accomplished and placed on the web.

Approximately 80% of the examiners use EAST as their primary search tool, with the remainder using WEST. EAST users also use WEST for retrieving foreign patent images. A future enhancement to EAST will provide this capability in EAST itself.

Biotechnology Sequence Search System

In 1990, the USPTO began requiring patent applicants who file applications that disclose protein and DNA sequence information to include a submission of the sequence information in computer readable format (CRF) (37 CFR §§ 1.821-1.825). The sequence submission requirement not only facilitates the examination of biotechnology-related patent applications, but also allows the USPTO to compile a database of sequence information contained in US patents. Under the rules, the patent applicant performs data entry of sequence information. The USPTO's Scientific and Technical Information Center (STIC) receives and evaluates each sequence submission to assess compliance with the technical requirements for format and validity, as well as compliance with the sequence submission rules. Once STIC verifies the submission, staff convert the data into a format compatible with the internal USPTO search system, and load the data into the pending sequence database. This sequence information, after processing, can then be used by examiners and STIC staff for searching and analysis. The USPTO also retains a copy of the original submission for inclusion in the permanent record of each patent application file, and for use in publication of the patent application upon grant.

The USPTO relies heavily on nucleic acid (e.g. DNA, RNA) and amino acid (e.g., protein) sequence information supplied in biotechnology patent applications to search nucleic and amino acid databases for relevant prior art and other information. This information is used to assess whether the claimed invention complies with the statutory requirements of utility, novelty, non-obviousness, and to provide an enabling disclosure of the technology behind the invention. The USPTO keeps pace with the rapid expansion in sequence information filings by continuing to enhance its Automated Biotechnology Sequence Search (ABSS) system for searching nucleic and amino acid sequences submitted as part of these applications. The ABSS system is based in-house on a network of Sun Microsystems hardware and many Compugen Bio XL/P or Bio XL/H boxes, which utilize the Smith-Waterman algorithm. The ABSS systems perform sequence searches on various databases including: EMBL, GenBank, Genseq, Swiss-Prot, and PIR.

More than 20 users, including Technology Center 1600 biotechnology examiners and STIC searching staff, can access this system 24 hours per day, seven days per week. During the first six months of FY2002 (October 2001-March 2002), over 4,900 sequence searches were conducted, and 9,611 sequence listings were received for processing.

External databases

USPTO patent examiners and trademark attorneys have access to over 1,000 commercially available databases including those provided by STN (Chemical Abstracts Services and two international organizations), Questel/Orbit, DIALOG, and LEXIS/NEXIS. The content of the Derwent World Patent Index file has been brought in-house and is available via WEST and EAST. Patent examiners in the biotechnology field also have access to the commercial sequence databases (for protein and nucleic acid sequence).

Administrative management systems (e.g., register, legal status, statistics, administrative support, etc.)

Patents Location and Monitoring System (PALM) Migration

The USPTO continued the phased subsystem delivery with successful delivery of the first subsystem (Infrastructure) in October 1998. The second subsystem (File Ordering) was delivered in October 1999. The third subsystem (Pre-examination system) was delivered in February 2000. The PALM project schedule has been impacted by implementation of the American Inventors Protection Act. All PALM related systems went through a major upgrade to support Legislation for the Pre Grant Publication of Application (PG Pub). This release was deployed throughout the USPTO on 29 November 2000. Exam Post-Exam (EXPO) is the project name for the final migration of the PALM system from the A-16 computer. EXPO encompasses the functionality of Examination, Post Examination and Patent Term Adjustment and was deployed in Fall 2001.

PALM on PTOnet

All Patent Examiners have been provided further access to the current Management Information System on their desktop PC via barcode readers and a web browser interface. This system has been found to provide increased case tracking accuracy.

Equipment used (hardware, including the types of terminal and network used, and software), carriers used

PTOnet has an architecture consisting of a campus-wide Gigabit Ethernet switched backbone with closet switches providing switched Ethernet connection to individual workstations. Currently, PTOnet users have dedicated 100 Mbps switched Ethernet connections.

PTOnet

Since desktop applications require increasingly more network bandwidth (through the backbone server attachments) in 2002 PTOnet was upgraded to keep ahead of the requirements. Prior to the most recent network upgrade, PTOnet users had access to a 10 Mbps Ethernet segment. Currently, PTOnet users have dedicated 100 Mbps connections; industry analysis indicates this will be more than sufficient for any forecast client application.

PTOnet provides examiners and other staff with access to the Internet through dual-redundant firewalls. Access zones implemented via firewalls and proxy servers have been implemented to provide a limited amount of controlled access to PTOnet resources for external users. Additional external access capabilities are being developed through the implementation of a variety of access control mechanisms including digital certificate-based authentication supported by a full Public Key Infrastructure (PKI).

Access to external databases

External databases are primarily accessed using software such as STN Express or DialogLink loaded on PTOnet. Examiners also use secure communications and servers to search these services via the Internet. During 2002, VPNs were set up for communication with STN and Dialog, allowing for fast, secure searching. Examiners establish connections to the external databases through sessions that are set up after logging into the PTO firewall. PTO's Internet access line bandwidth was increased from a fractional T3 to a full T3 (45 Mbps). Work is underway to make the current "shadow" (redundant) T-3 into a load-balanced fractional T-3 to accommodate additional traffic.

Existing online thesauri; their structure, presentation and usefulness for computerized searches

Both of the Search Systems, EAST and WEST, have the Assignee Thesaurus and a general technical thesaurus from the US Defense Technical Information Center (DTIC).

VI. Administration of the industrial property office library and services available to the public (relating to facilities, e.g., for lodging applications, for assisting clients on searching procedures, for obtaining official publications and registry extracts)

Planning, administration, automation, security, buildings

Planning and Administration

The Scientific and Technical Information Center (STIC) is organizationally part of the USPTO's Search and Information Resources Administration. Although providing a number of services to the public, STIC's primary mission is to serve the examining and professional staff of the USPTO. STIC is composed of three divisions – the Centralized Services Division, the Electronic Information Center Division, and the Biotechnology /Chemical Division.

The Electronic Information Center Division is responsible for the provision of examination support services through satellite information facilities located in six Technology Centers. These decentralized facilities, called Electronic Information Centers, serve as focal points for information services. The staff provides prior art and document delivery services and transmits requests for other services (e.g. translation, interlibrary loan) to the appropriate STIC unit for action. The Lutrelle F. Parker, Sr. Memorial Law Library provides access to legal information for examiners and other USPTO staff. The law library is located in a joint facility with one of the EICs.

The Biotechnology/Chemical Division serves the growing information needs of Technology Center 1600. The division and its associated library are STIC's first and currently the largest effort to provide onsite information services to a technology center. The division provides biotechnology and chemical online search services for examiners only and reference services for the examiners and the public. The staff manages the processing of computer readable form submissions for patent applications containing nucleotide and amino acid gene sequences and they are also the primary users of the inhouse genetic sequence search system. The Translations Branch, which provides examiners with both oral and written English-language translations of foreign patent documents and technical articles, is also part of the Division.

The Centralized Services Division is responsible for assisting examiners and the general public in the use of the USPTO's extensive collection of foreign patents as well as the scientific literature collections of the information center's main branch. Access to prior art is provided through the use of in-house and commercial databases and Internet services, as well as printed and microform tools for older materials. The staff provides reference services to examiners and maintains self-service facilities for the public, patent examiners, and other USPTO professional staff. The division also provides copies of foreign patent documents to the public for a fee. The staff maintains the USPTO's collection of foreign patent documents. The Centralized Services Division is also composed of the Reference Delivery branch, which provides articles, books, and documents to examiners on request and the Information Access and Management Branch, which acquires, catalogs, and provides access to print and electronic tools for examiners.

Automation

STIC utilizes an automated library system accessible to examiners at the desktop and to other users in STIC facilities. The catalog includes the post-1977 non-patent literature collection and the most active portion of the pre-1977 collection. The catalog allows searchers to hyperlink to electronic journals and books in the STIC collections.

STIC develops and maintains intranet pages describing services and print and electronic resources useful to examiners in various technology centers and art units. A Web page for each technology center presents links to databases, books and journals, reference tools, and Web resources useful to examiners covering those arts. Specialized pages have also been developed in emerging areas of patent interest including business methods and nanotechnology.

Security, Buildings

The main STIC collection is housed in commercially owned buildings along with other USPTO offices and remains locked during non-business hours. The property owners provide guards to control access to the buildings during non-business hours. Roving guards are provided during regular business hours. STIC takes various security measures to ensure the integrity of the STIC collection, including issuing USPTO security passes to all STIC employees and utilization of a book detection system. STIC facilities located in technology centers are accessible to examiners 7 days a week, 24 hours a day.

Collecting, acquisitions, preparation

STIC has the mission of identifying, acquiring and maintaining non-patent literature (NPL) in electronic and print formats, devoting special emphasis to literature for new and emerging technologies. The NPL resources acquired focus on the applied science and technology fields, with special emphasis on creating special collections or systems for rapidly developing technologies, e.g. computer software, business methods, and biotechnology. Staff also identify, evaluate and monitor expenditures for online commercial databases. In addition, STIC manages a support contract for the USPTO, which covers library services, facilities management, and information management functions.

The Foreign Documents Division processes and distributes all foreign patent documents and journals received at the USPTO. The majority of foreign documents are now received in CD-ROM format.

Collection management, preservation

The collections consist of over 150,000 monograph and serial titles, and millions of foreign patent documents. Those portions of the collection maintained in Main STIC and the Chemical-Biotechnology Library are open to the public. In accordance with the Patent Cooperation Treaty (PCT), STIC meets minimum documentation requirements for foreign patent documents and non-patent literature and makes these documents available to the public.

Interlibrary lending, resource sharing, networks of patent libraries in the country

Interlibrary Loans

STIC's Reference Fulfillment Branch was established to expeditiously provide the Examining Corps with non-patent literature references. After an examiner requests a non-patent literature reference, the Branch locates the reference and requests document delivery from a vendor/supplier. This work is increasingly accomplished electronically via fax, Internet, Ariel, CARL/Uncover, and other services. The staff uses OCLC (a national on-line shared cataloging and interlibrary loan system) and CUADRA Star as location tools and Dialog and STN for citation verification. The STIC participates in the National Commission on New Technological Uses of Copyrighted Works (CONTU). In observance of CONTU requirements, all requests are tracked for the number of occurrences from a journal on the Star system. If a minimum of five articles are requested from a journal not owned by STIC, either a subscription of the journal is purchased or copyright fees are paid to the Copyright Clearinghouse Center (CCC) through the lending library.

Reference and Copy Services

STIC provides reference assistance to examiners in the main facility, the Electronic Information Centers, the Chemical-Biotechnology Library, and the Parker Law Library during regular business hours. Reference service for examiners includes assistance with technical and reference materials, commercial online databases searches, document delivery, and sequence searches on STIC's internal automated biotechnology search system. With appropriate USPTO user passes, the public may gain access to the main facility and the Chemical-Biotechnology Library and use the collections (on-site), public copiers, and microfilm readers.

STIC's foreign patent staff provides assistance on the foreign patent collection to USPTO staff and to the public. Computer searches on commercially available databases such as Questel/Orbit and INPADOC are provided for USPTO staff only. As part of the public services available, the foreign patent staff will help the public locate foreign patent information by providing advice regarding searching, databases, and collections. Public users can make their own copies of foreign documents, or remotely, can request copies of foreign patents from the extensive STIC collections. The copy services are available both directly from the USPTO and as a component of the special service mix at Patent Depository Regional Libraries.

Resource Sharing

STIC, a participant of the OCLC shared cataloging and interlibrary loan system, is a non-supplier for interlibrary loans. STIC is also participating with research networks via the Internet to complement the existing shared cataloging and interlibrary loan system.

Network of Patent and Trademark Depository Libraries (PTDLs)

The USPTO's Patent and Trademark Depository Library Program (PTDLP) consists of 86 academic, public, state and special libraries, referred to as PTDLs, located in 49 states, the District of Columbia, and Puerto Rico. Three of these libraries offer additional fee-based services and are referred to as Partnership PTDLs. A list of PTDLs may be viewed at the USPTO's Internet Web site or in each issue of the Official Gazette.

The 25th Annual PTDL Training Seminar held in Arlington, Virginia from March 17-22, 2002 hosted 100 registrants. Ninety-one librarians representing 76 PTDLs and representatives from the following national patent offices were represented: The State Intellectual Property Office of the People's Republic of China, Canadian Intellectual Property Office, and The Patent Office of Finland.

The PTDL Program was involved in a number of outreach activities during 2002. It sponsored and staffed exhibit booths at the American Library Association Midwinter Conference in New Orleans, LA, ALA Annual American Library Association Conference in Atlanta, GA; The Special Libraries Association Annual Conference in Los Angeles, CA; PATLIB in Giardino Naxos, Sicily, Italy; and PTO Community Days in Arlington, Virginia. Public seminars and staff training were also conducted at a number of PTDLs throughout the year, including 13 Trademark Customer Outreach seminars conducted by experts at the USPTO. Finally, numerous briefings on the PTDL Program were provided to international visitors and to various USPTO Technology Centers.

Information on the Patent and Trademark Depository Library (PTDL) Program is available from the PTDLP Web site located at: <http://www.uspto.gov/go/ptdl>. The Web site includes information about the Program's mission, history, background, services, and core collections, as well as links to the Program's publications, materials, and reference tools. Each of the 86 PTDLs is linked from the PTDL List available from the Web site.

Automated Information in Patent and Trademark Depository Libraries

Web-based online searching for the patent text and image database is available at the 28 PTDLs that have access to WEST. All PTDLs provide public access to the USPTO web site.

The USPTO continues to provide a number of optical disc products to PTDLs for direct public use. This includes all Cassis optical disc products; Patents BIB, Patents CLASS, Patents ASSIST, Patents & Trademarks ASSIGN, Trademarks BIB, Trademarks ASSIST, USAPat, USAApp, and USAMark.

Partnership PTDLs in Sunnyvale, California, College Station, Texas and Detroit, Michigan offer fee-based access to selected USPTO in-house automated systems. These systems include WEST, EAST, and X-Search. Other PTDL Partnership services include electronic ordering of US and foreign patent documents, on-site and videoconference practitioner and public seminars, local filing of Disclosure Documents, and a secure videoconferencing capability between patent examiners and inventors and/or attorneys.

Information services available to the public (including computerized services and search files contained in libraries remote from your Office and patent information posted by your Office on the World Wide Web)

Automated Information in Patent Public Search Facilities

In 2002, public access continued to be offered via the Universal Public Workstation (UPWS), a secured access computer providing a single platform and consistent interface to all databases. The patent examiner search systems EAST and WEST, and document image print WALK-UP are the heaviest used applications provided on UPWS. Other patent applications on UPWS are the DVD-ROM Cassis titles (added September 2001), Patent Application Locator (PatAppLoc, added November 2001), Patent Maintenance Fees (PatFees, added November 2001), and Paper Classified File Locator (PatPapLoc added November 2001). Two additional applications became available in 2002. Assignments Historical Database (AHD) was added February 2002 and Patent Assignment Information Retrieval (PAIR) was added in March 2002. Both EAST and WEST retrieve all US patent images and word search the text contained in US patents granted since 1971. They also provide text searching of English language patent abstracts from the European Patent Office and the Japan Patent Office, and a set of foreign patent images formerly available only from CD-ROM. Public access to these search systems continues to grow. Use increased from 8,970 hours in January 2002 to 13,538 hours in January 2003. An average of 573 unique customers used the systems monthly, with a high of 871 users in August 2002. There were an average of 11,679 sessions monthly. This averages 531 patent sessions per day in the patent search facilities.

The number of workstations has increased significantly in the Patent Search Room, from 6 in 1999, to 95 in December 2002. In addition there are 23 UPWS workstations in a special ergonomic Patent Search and Image Retrieval Facility, for a total of 118 UPWS workstations for patent searching. Session fees were suspended in October 1999 to encourage electronic searching; however, print fees are collected at the UPWS workstations via on-line accounts. With the increased number of workstations and availability from 8 AM to 8 PM Monday through Friday, there are no wait lines at this time.

An 8-hour training course for novice or first time patent users is available to the public on the WEST system. A 4-hour course for advanced users is available on the EAST system. Courses are scheduled once a month for a nominal fee, or more often as needed. Special one-page guides and Helpful Hints are available in the on-line search areas. Individual assistance is always available from staff.

The Re-examination file system REPS was introduced into the Patent Search Room in February 2000. Re-exam files may be browsed and images printed from a stand-alone REPS workstation and printer. 400,550 pages from 302 files were printed in 2002. As CD-ROM titles have migrated to wider access of UPWS, the number of workstations accessing the public CD-ROM Local Area Network in the Patent Search Room has been reduced to 3. These provide access to all USPTO archival CD-ROM image retrieval products USAPAT, USAMARK, and Assignments, and to the Cassis2 titles.

Automated Products Provided to the Public

The USPTO's Information Dissemination Services continues to provide patent information products and services to the public in a variety of formats. The Products and Services Catalog, produced biennially, describes USPTO products and services, and contains details on how to obtain them. The Catalog is also available for viewing on the USPTO Web Site.

The following DVD-ROM products are available for purchase by the public:

Patents BIB: Selected Bibliographic Information from US Patents Issued 1969 to Present

This Cassis DVD-ROM contains bibliographic information for utility patents issued from 1969 to the present, and for other types of patent documents issued from 1977 to the present. It includes inventor names and addresses (if unassigned at time of issue), assignee at time of issue, status (i.e., withdrawn, corrected, expired for failure to pay maintenance fees, reexamined or term extended), current classifications, patent title, and patent abstracts from September 1988 to date. Patents BIB also refers to patent image locations on USAPat, described below. This DVD-ROM product is updated every two months.

Patents CLASS: Current Classifications of US Patents Issued 1790 to Present

This Cassis DVD-ROM contains current classification information for all utility, design, plant, reissue and X-numbered patents, as well as defensive publications and statutory invention registrations issued from 1790 to the present (over 6 million documents). Indexing of classification information has been optimized for rapid retrieval. This DVD-ROM product is updated every two months.

Patents and Trademarks ASSIGN: US Patents and Trademarks Assignments Recorded at the USPTO 1980 August to Present

This Cassis DVD-ROM includes data derived from assignment deeds for issued patents and registered trademarks, which were recorded at the Patent and Trademark Office after August 1980 for patents, and since 1955 for trademarks. The disc includes assignments recorded before and after the patent issued. This DVD-ROM product is updated every two months. This product is the combination of two previous titles, Patents ASSIGN and Trademarks ASSIGN, now no longer published.

Patents ASSIST: Full Text of Patent Search Tools

This Cassis DVD-ROM is a compilation of many patent search tools including the following: Manual of Classification, Index to the US Patent Classification, Manual of Patent Examining Procedure, IPC - USPC Concordance, and Attorneys and Agents Registered to Practice Before the US Patent and Trademark Office. In addition, Classification Definitions, a Patentee-Assignee Index, and a Classification Orders Index are included. The Patentee-Assignee Index shows ownership at time of issue for utility patents 1969 to present; for other patent types 1977 to present; and inventor names 1975 to present. The Classification Orders Index is a list of classifications abolished and established since 1976 with corresponding Classification Order number and effective date. This DVD-ROM product is updated every three months.

Manual of Patent Examining Procedure (MPEP)

This Manual is published to provide US Patent and Trademark Office patent examiners, applicants, attorneys, agents, and representatives of applicants with a reference work on the practices and procedures relative to the prosecution of patent applications before the Patent and Trademark Office. The MPEP is available in electronic form as an ASCII text file downloadable (no charge) from the USPTO Web site on the Internet at <http://www.uspto.gov/>, and as a searchable text file on the Patents ASSIST DVD-ROM product which includes many other useful files. Each revision is fully incorporated into the base edition and republished as a whole.

USAPat: Facsimile Images of United States Patents

This Cassis DVD-ROM product contains facsimile images of US patents. An "image" is an actual page of the patent, including all drawings, and looks just like the original printed document. The purpose of USAPat is to serve as a document delivery system, not as a search system. Retrieval is by document number only from a cumulative index. Excellent printed copies of actual documents can be obtained directly from a laser printer. Over 150 discs are published each year (three to four discs per week). Delivery of weekly discs is usually within 15 days from issue date. USAApp: Facsimile Images of United States Patent Application Publications

USAApp contains facsimile images of the U.S. patent application publications filed on or after November 29, 2000. A new law effective November 29, 1999, requires publication of patent applications approximately 18 months after the effective filing date. All utility and plant patent applications will be published unless the application is not filed in another country and the applicant expressly requests that the application not be published, or the patent has been granted. Design patent applications will not be published. An "image" looks like an actual page of the application, including all drawings. USAApp is a document delivery system, not a search system. Retrieval is by document number only from a cumulative index. Excellent printed copies can be obtained directly from a laser printer.

Trademarks BIB : Bibliographic Information from Abandoned, Canceled, Expired, Pending, and Registered US TradeMarks

This Cassis DVD-ROM contains the text of all abandoned, canceled, expired, pending, and registered trademarks from 1884 to present with 30 searchable fields. This DVD-ROM product is updated every two months. This product is the combination of two previous titles, Trademarks PENDING and Trademarks REGISTERED, now no longer published, with the addition of abandoned, canceled, and expired marks. Trademarks BIB also refers to trademark image locations on USAMark, described below.

Trademarks ASSIST: Full Text of Trademark Search Tools

This Cassis DVD-ROM includes the searchable text of the Trademark Manual of Examining Procedure, the Goods and Services Manual, the Trademark Trial and Appeal Board Manual of Procedure, the Trademark Statute and Rules (Trademark Act of 1946 and the Rules of Practice), the Trademark Telephone Index, and the PTO Products and Services Catalog. It is updated on an irregular basis.

USAMark: Facsimile Images of United States Trademark Registrations

This Cassis CD-ROM contains facsimile images of U.S. trademark registration certificates issued from 1870 to the present. An "image" is an actual page of the trademark, including renewals and modifications, and looks just like the original printed document. USAMark is a document delivery system, not a search system. Retrieval is by document number only from a cumulative index that covers all issued discs. Excellent printed copies of actual documents can be obtained directly from a laser printer. USAMark consists of 168 discs including registrations through July 2003. USAMark is published monthly.

Electronic Official Gazette of the U.S. Patent and Trademark Office – Patents (eOG:P)

The eOG:P began publication in July 2002 on both the USPTO Web site (free) and on CD-ROM (subscription). In September 2002, the eOG:P replaced the paper Official Gazette that had been published since 1872. The eOG:P contains the OG record, including exemplary claim and a representative image (if applicable). Indexes by type of patent (e.g., utility, design), patentee name (both inventor and assignee), geographical location of the first listed inventor (U.S. state or country), and classification are provided. The eOG:P is available each Tuesday.

The USPTO maintains World Wide Web (WWW) and File Transfer Protocol (ftp) sites on the Internet, which permit the public free access to selected information related to patents and trademarks.

The USPTO Web site at <http://www.uspto.gov/> contains information about the office and information about patents and trademarks. It also provides access to searchable databases of patent and trademark information, and to tools that assist users in obtaining information.

In September 1999, the USPTO deployed a system that allows patent applicants and/or their designated representative(s) secure restricted Internet access to patent application status and prosecution history data for their pending patent applications. The Patent Application Information Retrieval system also provides public access to this information for granted patents. The mechanisms implemented to support secure access include the deployment of a Public Key Infrastructure (PKI). The PKI will provide the means to use digital certificates to accomplish strong authentication of individuals accessing the PAIR application. PAIR was initially made available to a limited number of users in July 1999 during a pilot period. The feedback and lessons learned from the pilot resulted in a number of enhancements to the PAIR software, Infrastructure, and the Registration process supporting the issuance of digital certificates. PAIR is accessible from the Patents Electronic Business Center link from the USPTO web site.

In August 1998, the USPTO began providing free access to a searchable trademark database. It consists of bibliographic data and full-text of over one million registered trademarks and pending applications which date back to 1870. Currently, the text portion of the database is updated on a two-month cycle, and images are updated weekly.

A new version of the trademark searchable database was recently added. It includes enhanced searching capabilities and is updated on the same schedule as the searchable database used internally by the Trademark Examiners.

In October 1998, the USPTO began accepting Trademark applications electronically from a web-based application. The USPTO currently receives approximately 15% of all Trademark applications from this site. A similar pilot project for Patents is currently underway.

Patent and Trademark application status information are both available from the USPTO website. Both of these databases are searchable and are updated on a daily basis.

In November 1995, the USPTO began providing access to patent bibliographic information and abstract text on its Web Site. The PatBib database contained the data back to January 1976, and was updated on a weekly basis, usually on issue day (each Tuesday). While the PatBib database has been discontinued due to the availability of searchable full patent text on the USPTO Web Site, the patent bibliographic raw data continues to be made available for FTP downloading with updates occurring, usually on issue day, for each new patent issue. In November 1998, the USPTO began providing access to the searchable, full text of US patents granted from January 1976 to the present. The database is updated weekly, usually on issue day.

VII. Matters concerning mutual exchange of patent documentation and information

International or regional cooperation in the exchange of machine-readable information, e.g., bibliographic data, abstract and/or full text information

Patent document exchanges are maintained with substantially all patent-issuing intellectual property offices. US patents images and information are provided to 113 intellectual property offices on optical disc products (mostly in DVD-ROM format - see descriptions of the products above). Copies of US plant patents are provided in paper form to 22 intellectual property offices.

The USPTO has been involved in a variety of discussions concerning the exchange of patent documentation and information. Principally, these efforts have taken place in the context of the Trilateral Partnership consisting of the European Patent Office (EPO), the Japan Patent Office (JPO) and the USPTO. The Trilateral Partners continue to work with WIPO on a number of patent-related matters, e.g., developing and updating standards related to storage of patent data on electronic media, etc.

Medium used for exchange of priority documents

There are no new activities in this area.

Medium allowed for filing applications

Electronic Filing System (EFS)

Electronic Filing System (EFS) – The EFS system includes the electronic Packaging and Validation Engine (ePAVE) client application. The ePAVE client provides a number of forms containing transmittal and fee related information that are used by the applicant as part of preparing an

application for submission. The information entered into each of the various forms is saved as XML documents. The Specification, including the abstract, claims, drawings, continuity data, etc may be authored as a structured XML document using an authoring template created by the USPTO for WordPerfect Version 9, which is targeted to be retired on September 30, 2003. A form in the ePAVE client is provided for the applicant to attach the XML instance created with the WordPerfect template. Once the applicant has completed the appropriate forms and attached the specification instance, the XML documents and any externally referenced files such as TIFF images of drawings and complex work units are bundled and compress into a single zipped archive. A Microsoft Word based XML authoring capability was added in 2000. The applicants' digital certificate, issued by the USPTO is used to digitally sign the zipped archive, and the package is encrypted and transmitted to the USPTO via the Internet. Once the package is received, the integrity of the package is validated and a receipt including a timestamp and the contents of the submission package is generated for the applicant.

The USPTO has been working with the EPO, JPO and WIPO to provide XML authoring solutions incorporating internationally agreed upon Document Type Definitions (DTDs).

A brief description of each of the submission types currently accepted by the USPTO follows:

New Utility

A New Utility application for patent is a U.S. national application used to protect useful processes, machines, articles of manufacture, and compositions of matter. A Utility patent may be granted to anyone who invents or discovers any new, useful, and non-obvious process, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof.

Provisional

A provisional application for patent is a U. S. national application for patent filed in the USPTO under 35 U.S.C. §111(b). It allows filing without a formal patent claim, oath or declaration, or any information disclosure (prior art) statement. It provides the means to establish an early effective filing date in a non-provisional patent application filed under 35 U.S.C. §111(a). It also allows the term "Patent Pending" to be applied.

Pre-Grant Publication (PGPub)

A pre-grant submission is a submission of a copy (possibly amended or redacted) of an application specification already filed at the USPTO, together with patent application information that will be published along with the specification. The pre-grant submissions will be published, but will not be entered into the examination process.

Informational Disclosure Statement (IDS)

One of the services provided for inventors is the acceptance and preservation by the USPTO for a two-year period of papers signed by the inventor(s) disclosing an invention. This disclosure is accepted as evidence of the dates of conception of the invention. The Disclosure Document will be retained for two years and then be destroyed unless it is referred to in a separate letter in a related patent application within those two years.

An IDS may be filed with a new application or as a separate submission for previously filed applications.

Bio-Sequence Listing

This is a paper document that must be included only if a nucleotide or amino acid sequence is part of the invention. (can be attached in Epave)

Assignment

A patent is personal property and may be sold to others or mortgaged; it may be bequeathed by a will, and it may pass to the heirs of a deceased patentee. The patent law provides for the transfer or sale of a patent, or of an application for patent, by an instrument in writing. Such an instrument is referred to as an assignment and may transfer the entire interest in the patent. The assignee, when the patent is assigned to him or her, becomes the owner of the patent and has the same rights that the original patentee had.

Electronic Filing Process

EFS Components

The following software tools and utilities make up the body of EFS.

Optional Authoring Tools

The following software tools are used to author patent application specifications documents that are then packaged with ePAVE and electronically transmitted to the USPTO.

PatentIn

If an application contains a nucleotide or amino acid sequence, the filer must describe the sequence according to the USPTO's sequence rules (standard symbols and format). PatentIn is software for submitting the sequence in electronic form.

PASAT

Patent Application Specification Authoring Tool (PASAT) is intended to assist those firms and individuals who wish to author a patent application specification document that is to be electronically submitted to the USPTO using EFS.

XPort

XPort is a new translation tool publicly released in EFS 5.1, which allows PASAT authored specifications to be converted to Annex F (PCT) complaint format.

Electronic Packaging and Validation Engine (ePAVE)

ePAVE allows the applicant or practitioners to collect, validate, and submit Patent application information to the USPTO.

USPTO Direct 6.0

This is the software is used to create the digital certificate needed to send secure submissions to the USPTO. It should not be downloaded until completing the PAIR registration process.

Electronic Filing Workflow

EFS is the USPTO's software solution used by patent applicants and practitioners to electronically author and securely submit patent applications to the USPTO via the Internet.

EFS is made up of two/three software components –

Patent Application Specification Authoring Tool (PASAT). This is authoring software that complies with USPTO business rules and electronic data capture standards.

XPort is a new translation tool publicly released in EFS 5.1, which allows PASAT authored specifications to be converted to Annex F (PCT) complaint format.

electronic Packaging And Validation Engine (ePAVE). This is an easy to use submission software program that creates forms, and validates, bundles, compresses, encrypts, digitally signs, and securely submits the electronic application files and information.

PatentIn

Since October 1990, the USPTO has made available to customers a software tool called PatentIn. This tool provides customers an efficient means to comply with USPTO rules requiring a Sequence Listing (in paper and electronic form) to accompany each biotechnology patent application that contains biological sequence information. This tool was initially designed and developed by the USPTO, and is used by over 70 percent of customers when they submit such applications. Several modifications and improvements to make PatentIn compatible for international use have occurred since 1990 resulting in the final DOS version, PatentIn 1.3.

During the early 1990's, the USPTO and the EPO customers suggested that, given the projection for increased rate of submissions, the software would be far more beneficial if it were Windows based. In addition, both the EPO and the JPO have requested the rapid development and implementation of the Windows PatentIn product as part of a Trilateral Project to ensure that their respective biotechnology patent examination efforts are equally as efficient. In 1996, the USPTO and the EPO began a cooperative effort to develop a Windows-based version of PatentIn that would satisfy WIPO Standard ST.25. As a result of these efforts PatentIn 2.0 was released in 1998. An updated and improved version called PatentIn 2.1 was released in 1999.

Development of the next version, PatentIn 3.0, was completed in June 2000 and deployed on the USPTO website in July 2000. This began as a web-based version with the idea being to generate the sequence listing and immediately transmit it to the USPTO over the Internet. The development of EFS overtook the PatentIn revision effort so the focus was changed to improvements in version 2.1 instead. PatentIn 3.0 can handle up to 100,000 sequences and sequences with lengths of up to one million residues. It is written in Visual C++ which makes it easily portable to any Windows-based system.

PatentIn 3.1 has been in process since deployment of PatentIn 3.0 and it corrects two or three problems remaining with the older version as well as offers some improvements. PatentIn 3.1 can handle sequences of up to about 4 million residues, the import scheme has been improved and features for Xaas in supplemental sequences are calculated automatically. PatentIn 3.1 was deployed in June 2001. PatentIn 3.2.2 was deployed in March 2003 as a maintenance release. PatentIn 3.2.3 was deployed in August 2003 as a maintenance release to correct stability issues.

EFS Timeline

- Initial release of the EFS for bio-sequences via the Internet – September 1999
- Initial release of the EFS for new utility patent application parts via the Internet – December 1999
- Pilot participants received the pilot version of PASAT – June 2000
- Production versions of PASAT, TSA for WordPerfect and ePAVE released for use to the general public (Part of EFS 3.0) – October 2000
- EFS 3.0 for Expanded Pilot – October 2000 (Features included: New Utility; PG-PUB; Assignments submissions; EFS Server; RAM I/F for credit cards; PASAT 1.1)
- EFS 3.0 Pre-Grant Publication – (Publicly released November 2000)
- EFS 4.0 - October 2001 Features: Electronic filing of Provisional patent applications; subsequent patent assignments without including patent application; Acceptance of multiple patent assignment cover sheets to be transferred in one patent application filing; Acceptance of text files that contain patent application appendix data as described in rules CFR 1.96, CFR 1.58 (i.e. computer listings, large tables); Submission software (ePAVE) will provide a Save as Template option which enables the user to author recurring patent application information once such as a filer's name, then save the partially created xml document file for later use; ePAVE will create "project" file automatically without manual save step; ePAVE creates separate folder in which to store the tiff image files as part of the project file.
- EFS 4.1.3 – May 2002 (Features: IDS)
- EFP Contract Signed – June 2002 (Features: desire for 5 independent software developers to design, develop, produce, maintain and support e-filing software solutions)
- EFS 4.1.1 – October 2002 (Will feature updated fee codes)
- FS 5.0 & EFP Program - January 2003 (Features: Annex F compliant server and various dlls for the EFP Partners (submission and validation tools)
- EFS 5.1 – April 12, 2003 (Annex F compliant (accepting both high-level and low-level certificates) upgraded version of ePAVE (Annex F compliant DTDs – PCT application-body.dtd v1.1, USPTO Stylesheets, 508 compliant GUI, etc.); also deployed xPORT- Translation Tool to translate the PASAT authored XML to the Annex F compliant Application-Body.dtd v1.1.

Implementation of the Statement of Principles Concerning the Changeover to Electronic Data Carriers for the Exchange of Patent Documents (please provide a status report on the extent to which your Office has changed over to electronic data carriers for the exchange of patent documents)

The USPTO began providing copies of its patent documents on the USAPat CD-ROM product (see description above) to all of its international exchange partners in 1994. In consideration of the increasing costs of storing and maintaining paper patent documents and the costs of maintaining their availability on microfilm media, the USPTO continues to study ways to provide exchange recipients with US patent specifications on CD/DVD-ROM or other electronic media.

Each office continues to have access to the documents on USAPat DVD-ROM. Offices currently receiving paper copies of color plant patents will continue to receive them until plant patents are available in color on a suitable electronic media.

In a related development, the USPTO began distributing its Official Gazette for Patents only in electronic format (eOG:P) on CD-ROM and on its website (see above for details) in 2002.

VIII. Other relevant matters concerning education and training in, and promotion of, the use of patent information, including technical assistance to developing countries

Training courses for national and foreign participants, use of audiovisual means

The USPTO provides technical training relevant to intellectual property law and patent and trademark practice for all attorneys and patent examiners. Additionally, a variety of technical classes are available dealing with search techniques on the USPTO automated system and methods of using a variety of custom computer software to assist in the examination process.

The Office of Training participates in the two week Visiting Scholars Program. Here the USPTO hosts patent professionals from offices worldwide and present them with training on patents, trademarks, copyrights, and related procedural and operational issues.

Assistance to developing countries (sending consultants and experts, receiving trainees from developing countries, etc.)

The USPTO offers various programs to provide technical assistance to developing countries and to countries moving to a market economy. Programs focus on establishing adequate systems in these countries for the protection of intellectual property rights. They also provide intellectual protection enforcement training. With the exception of the Visiting Scholars Program, the USPTO programs usually last one week. The goal of the programs is to provide advice and expertise to these countries with the desired outcome being the reduction of losses resulting from piracy of U. S. intellectual property.

The Visiting Scholars and Enforcement Programs for FY 2002 provided participants from Mexico, Nigeria, Eritrea, Korea, Cyprus, Guatemala, Romania, Bulgaria, Czech Republic, Dominican Republic, Ecuador, Egypt, Guyana, Hong Kong, Indonesia, Jordan, Kenya, Nicaragua, Philippines, Russia, Slovakia, Trinidad and Tobago, Zambia, Albania, Croatia, Macedonia, St. Lucia, Serbia, Thailand, Tanzania, and Vietnam with classroom and hands on study of various aspects of the administration of intellectual property law, patent and trademark examination and copyright protection, enforcement of intellectual property laws, and an opportunity to gain an understanding of the important role of intellectual property protection as a tool for economic development. Other highlights for the year included an increased emphasis on enforcement of intellectual property rights in China. This focus included a two-month detail of USG staff to China to directly work with the Chinese government in this area.

Studies to identify trends in new technology, e.g., by the use of patent statistics, preparation of monographs, etc.

The USPTO maintains the Technology Assessment and Forecast (TAF) database, which allows selected patent bibliographic information to be accessed, retrieved, and analyzed in a variety of ways. Time-series information by country, company, and technology may be obtained and used to identify trends. Specific information, such as patent titles and independent inventor names and addresses, is also available. A variety of prepared TAF database statistical reports containing calendar year data are available to the public.

Many TAF database calendar year statistical reports displaying overall trends by country, state, type of patentee (e.g., corporate, individual, or government), and patentee organization are available free of charge while other prepared reports are available for a nominal charge. Some reports present profiles of patenting activity in selected new and active technologies such as for the Internet, Semiconductors, and Telecommunications; other reports profile regional US patenting by state and locality; still other reports display trends by specific patenting group (e.g., US universities, US women). Many profile reports are updated once or twice annually, and new reports are added as necessary. In addition, customized patent trend reports may be obtained for a fee, subject to available resources. Many of the TAF database general statistical reports may be accessed at the USPTO's Internet Web site; some reports are available only at the Internet Web site.

Assistance furnished by offices to facilitate the changing over of receiving offices to electronic data carriers for the exchange of patent documents (see also 4th item of paragraph VI, above)

The USPTO closely cooperates with its exchange partners and provides detailed responses to requests for information regarding use of its USAPat CD/DVD-ROM products as replacement for paper or microfilm patent documents.

IX. Other relevant matters

1.	Classification is allotting one or more classification symbols (e.g., IPC symbols) to a patent application, either before or during search and examination, which symbols are then published with the patent application.
2.	Preclassification is allotting an initial broad classification symbol (e.g., IPC class or subclass, or administrative unit) to a patent application, using human or automated means for internal administrative purposes (e.g., routing an application to the appropriate examiner). Usually preclassification is applied by the administration of an office.
3.	Reclassification is the reconsideration and usually the replacement of one or more previously allotted classification symbols to a patent document, following a revision and the entry into force of a new version of the Classification system (e.g., the IPC). The new symbols are available on patent databases.