

# SCIT.ATR.PI.2003.US

## Annual Technical Report 2003 on Patent Information Activities submitted by United States of America (SCIT/ATR/PI/2003/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) 2003, the United States Patent and Trademark Office (USPTO) granted 169,028 utility patents, an increase of 1.0 percent over the number of grants for CY 2002. The share of grants having foreign origin, as determined by the residence of the first-named inventor, was 48.0 percent for CY 2003, the same as the 48.0 percent for CY 2002. The top four patenting organizations for CY 2003 are International Business Machines Corporation receiving 3,415 utility patents, Canon Kabushiki Kaisha receiving 1,992 utility patents, Hitachi, Ltd. receiving 1,893 utility patents, and Matsushita Electric Industrial Co., Ltd. receiving 1,774 utility patents.

There were 342,441 non-provisional utility patent applications filed at the USPTO in CY 2003, a 2.4 percent increase as compared to CY 2002. The share of non-provisional utility patent applications having foreign origin, as determined by the residence of the first-named inventor, is 44.8 percent, slightly down from 44.9 percent for CY 2002.

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

In calendar year 2003, the following active technology areas showed large increases in utility patent activity as compared to CY 2002: 'Coherent Light Generators' (up 58 percent), 'Oscillators' (up 54 percent), 'Data Processing: Artificial Intelligence' (up 50 percent), 'Data Processing: Design and Analysis of Circuit or Semiconductor Mask' (up 47 percent), and 'Planetary Gear Transmission Systems or Components' (up 45 percent), and 'Optics: Measuring and Testing' (up 43 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 is moving towards transferring all data to and from the Patent Data Capture Contractor using electronic data transfer. This is a result of implementing the Image File Wrapper. The office is phasing out conventional paper applications.

The USPTO is moving towards an image product for Pre-Grant and Grant documents that uses industry standard TIFF as oppose to a proprietary format following WIPO Standard ST.33.

The USPTO is moving towards a searchable product for Pre-Grant and Grant documents based on the International Common Elements as oppose to WIPO ST.32.

#### 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 at no charge to intellectual property offices around the world, to PTDLs and to the USPTO search facilities. An additional 56,000 discs are distributed each year to Federal Depository Libraries directly from the Government Printing Office.

Exchange data products for other IP Offices and commercial customers consist of image data and XML files. The Data Dissemination Branch (DDB) oversees the creation and dissemination of over 300 data files each week. These data files are provided via File Transfer Protocol (FTP) and Digital Linear Tape to over 50 external customers worldwide.

## 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 IFW systems integration 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.

As the old PACR image database is replaced with IFW images files, the PACR modules are being upgraded to a new AIS called Patent Application Security System (PASS).

PASS utilizes the images captured by the new IFW scanning system and continues to support PGPClass and Pre-Grant Publication.

### 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 examiners perform a second-level security review.

In FY05, 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.

In implementing an image-based file wrapper system, the USPTO had an opportunity to pursue collaborative information technology development with the EPO. The Patents IFW development approach began using 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 scanned 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 first 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 took delivery of the first portion of its new Alexandria campus (Carlyle) in the first quarter of fiscal year 2004. As the USPTO operations were split between two campuses, the movement of papers and paper application files became increasingly more difficult to manage and the cost associated with paper handling increased dramatically. The use of the IFW system by examiners was phased in with the move sequence for the TCs moving to the Carlyle Campus beginning in December 2003, with full deployment completed August 2004.

In order to meet and overcome these operational challenges, the USPTO will continue to capture pending back files in order to minimize the need to move paper to the new campus. The IFW system will be integrated with the USPTO legacy systems to provide functionality that is unique to the USPTO business process. The integration of IFW 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: image file wrapper management, workflow capability including messaging function, and integration of existing major USPTO automated information systems (such as PALM and OACS) using Enterprise Application Integration (EAI) technology.

#### 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 2005. 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). The FPDB consists of the English-language Patent Abstracts of Japan (PAJ) from 1976, and five European Patent Office (EPO) member states (EP 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 is 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 technical requirements and 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). The data 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 Bioceleration Bioaccelerators, which utilize the Smith-Waterman algorithm. Databases included in searches performed by the ABSS system are: EMBL, GenBank, Geneseq, 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, 2002, to September 30, 2003, 18,728 sequence listing CRFs were received from applicants and over 10,400 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 2003.

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

#### **Abstracting, reviewing, translating**

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

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 FY2003 was over sixteen 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 2003, approximately 196,941 patent documents were reclassified and 1,632 new subclasses were established in 15 classes in the US Patent Classification (USPC) system. Of this total 20,091 were Pre Grant Publications and approximately 176,850 were United States patent original or cross-reference classifications.

The Classification Data Systems automated classification desktop tool was deployed to additional classifiers and examiners in 2003. 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. In association with unilateral, bilateral and/or trilateral classification harmonization projects, USPTO has developed a process for assigning USPC codes to unique non-US patent documents. This process will be expanded for incorporation with IPC Reform. The USPTO continues to investigate 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 from 2002 on include both a US Patent Classification designation and an International Patent Classification designation. The electronic search systems EAST and WEST available within the USPTO 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 2003 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 relevant documents by text searching the "dirty" OCR file, but will use the document images to determine applicability to applications under review.

## **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 2003, an average of 3,585 US patents issued each week and were added to the Search file; an average of 14,183 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 2003, an average 40 Pre Grant Publications issued each week and an average of 78 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. As of January 2002, examiner access was provided through both EAST and WEST search clients to the 1920 to 1970 data. USPTO embellished these text records by obtaining and processing an electronic source of titles and inventor names. Providing access to the segment for the time period 1790 to 1919 is being planned in conjunction with the implementation of enhanced system architecture in 2005.

#### **NPL**

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

#### **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 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 2003, an average of 8,156 US patent documents (US patents and Pre Grant publications) were published each week and an average of 6,338 classification codes associated with these documents were added to the database each week. Every other month, USPC classification information for all records, US and non-US, is updated to account for reclassification projects and miscellaneous transfer requests of examiners.

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.

The USPTO's Data Maintenance Branch and staff performs the data loading and maintenance of both text and image data for the following domestic databases:

Patent Image Retrieval System (PIRS), Patent Images on the Web (PIW), Application Image Retrieval System (AIRS), Application Images on the Web (AIW), Bibliographic Retrieval Service (BRS) Patent Grant and Application Text Database, Publication Site for Issued and Published Sequences (PSIPS), Patent Application Location and Monitoring (PALM - Tape Creation Process), Patent Application Services and Security (PASS Grants and Application - Tape Creation Process), Electronic Filing System (EFS - Tape Creation Process), CD-Rom Reference Library System and the Trademark Image Capture and Retrieval System.

### **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 in electronic form to magnetic storage devices. Other countries, which provide independent exchange of documents in electronic form 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 available 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. During the past year access to Internet sites created and maintained by a number of national and multinational patent organizations became publicly accessible in the STIC's Main Branch.

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 unique 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. 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: Derwent WPI Data Load, Foreign Image Data Load (EPO/JPO Full Image Data, DOCDB, ECLA, JPO FI-Data File, JPO F-Term Data File, IPC Converted and Concordance File, EPO Espace, Canadian Mimosa and Australian Mimosa).

## **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 and in FY 2003, the OCR back file was deployed. Future enhancements to EAST will 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. In 2002-2003 WEST was enhanced to include the OCR back file to support to browsers other than Netscape, and to provide automated classification search query building from the Manual and Index of U.S. patent classifications. Future planned enhancements include performance upgrades and integration with other examiner automation tools.

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.

#### 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, and DIALOG. . The content of the Derwent World Patents 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).

The content of the Derwent World Patent Index file has been brought in-house and is available via WEST and EAST. STIC searchers and patent examiners in the biotechnology field also have access to several public and commercial biosequence databases, including: EMBL, GenBank, Genseq, Swiss-Prot, PIR, and SPTREMBL, as well as the in-house Pending, Published, and Issued databases.

#### 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 has been upgraded to two full T-3 connections (a total of 90 Mbps).

### 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

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 Biotechnology-Chemical Division serves the formation 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 in-house 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 print 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 print and microform 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. 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 providing access to Internet NPL tools and STIC services by art area. . A Web page for each technology center presents links to databases, electronic 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, traditional knowledge, and nanotechnology.

#### Security, Buildings

The main STIC print and microformat 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 and desktop electronic books, journals, and tools 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, nanotechnology, 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 print monograph and serial titles, and millions of foreign patent documents in print and microformats. 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 an in-house CUADRA Star database 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 Biotechnology-Chemical 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 Biotechnology-Chemical Library and use the collections (on-site), public copiers, and microfilm readers.

STIC's foreign patent staff provides assistance with 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 web site.

The 26th Annual PTDL Training Seminar held in Arlington, Virginia from March 16 to 21, 2003 hosted 90 registrants. Eighty-four librarians representing 70 PTDLs and representatives from these national patent offices were represented: The State Intellectual Property Office of the People's Republic of China and The Canadian Intellectual Property Office.

The PTDL Program was involved in a number of outreach activities during 2003. PTDLP sponsored and staffed exhibit booths at the Special Libraries Association Annual Conference in New York, NY; The American Society of Engineering Education Annual Conference in Nashville, TN; and The American Small Business Development Center Annual Conference in San Diego, CA. Public seminars and staff training were also conducted at a number of PTDLs throughout the year. Numerous briefings on the PTDL Program were also 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: [www.uspto.gov/go/ptdl](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 to the web site PTDL List.

### **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 PubWEST. All PTDLs provide public access to the USPTO web site.

The USPTO continues to provide 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, 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)**

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 October 2000, the USPTO began accepting filing of Patent applications electronically from client-based software. The USPTO currently receives approximately 2% of all Patent applications from this software. The USPTO is exploring the use of web-based tools to enhance this e-filing project.

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.

USPTO provides access to patent grant bibliographic information and abstract text on its Web Site. This raw data is available for FTP downloading with updates occurring each Tuesday issue date.

In March 2001, the USPTO began providing access to patent application bibliographic information and abstract text on its Web Site. This raw data is available for FTP downloading with updates occurring each Thursday publication date.

In November 1998, the USPTO began providing access to the searchable, full text of US patents granted from January 1976 to the present. Updates occur each Tuesday issue date.

In March 2001, the USPTO began providing access to the searchable, full text of US published patent applications from March 15, 2001 to the present. Updates occur each Thursday publication date.

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 provides 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. "Public PAIR" displays issued or published application status and is accessible from the Patents Electronic Business Center link from the USPTO web site. "Private PAIR" requires use of PKI digital certificates to provide secure access for customers who want to view current patent application status electronically via the Internet. In June 2003, a new service to view and download electronic documents within the Image File Wrapper was added to Private PAIR. In August 2003, Outgoing Correspondence Notification was introduced to Private PAIR, to display a listing of correspondence from the Office to the applicant, by application number and mail date. During November 2003, access to provisional application data was provided to Public and Private PAIR users. In December 2003, the ability to view and download cited US published and patented references was given to Private PAIR customers.

### **Automated Information in Patent Public Search Facilities**

In 2003, public access to automated information continued via the Universal Public Workstation (UPWS), a secured access computer providing a single platform and consistent interface to all databases. Public versions (no access to external databases) of 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 include the USPTO Web site, DVD-ROM Cassis titles, Assignments Historical Database (AHD) and Patent Assignment Information Retrieval (PAIR). Both EAST and WEST retrieve all U.S. patent images and word search the text contained in U.S. patents granted since 1971. The Optical Character Recognition application allows searching of U.S. patents both text and images back to 1920. EAST and WEST also provide text searching of English language patent abstracts from the European Patent Office and Japan Patent Office, and a set of foreign patent images formerly available only on CD-ROM. Public access to these search systems continues to grow. An average of 791 unique customers used the systems monthly, with a high of 855 users in July 2003. There were an average of 10,937 sessions monthly. This averages 365 patent sessions per day in the patent search facilities.

The number of workstations has increased significantly in the Patent Search Room, from six in 1999, to 158 in December 2003. Session fees were suspended in October 1999 to encourage electronic searching; however, print fees are collected at the UPWS workstations via online accounts. There are no wait lines at this time with the increased in the number of workstations and availability from 8 a.m. to 8 p.m. Monday through Friday.

An eight-hour training course for novice or first time patent users is available to the public on the WEST system. A four-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. 460,577 pages from 459 files were printed in 2003. 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 USPTO's archival CD-ROM image retrieval products USAPAT and Assignments.

### **Automated Products Provided to the Public**

The USPTO's Office of Electronic Information Products continues to provide patent information products and services to the public in a variety of formats. The Products and Services Catalog on the USPTO website describes USPTO products and services, and contains details on how to obtain them.

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 from 1790 to present. 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. Delivery of weekly discs is usually within 15 days from issue date.

**USApp: Facsimile Images of United States Patent Application Publications**

USApp contains facsimile images of the U.S. patent application publications filed on or after November 29, 2000 and published weekly beginning March 15, 2001. A 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. USApp 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.

**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 an 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.

## **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 114 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**

In 2003 USPTO began to provide certified copies for priority documents on CD-R media accompanied by a paper certification sheet when the size of the document exceeds 400 paper pages. The document page TIFF images are written to the CD-R media in a Portable Document Format (PDF) wrapper, so that they may be viewed and printed with the Adobe Acrobat or equivalent PDF reader. The paper certification sheet and CD-R are packaged together.

### **Medium allowed for filing applications**

Electronic Filing System (EFS)

Electronic Filing System (EFS) – The EFS system includes several components that provide external customers with the capability of submitting

patent applications and other forms electronically. The electronic submission tool is referred to as the electronic Packaging and Validation Engine (ePAVE) and it is a client-based application.. 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 or PDF documents using the EFS-ABX authoring template created by the USPTO . A form in the ePAVE client is provided for the applicant to attach the ABX package file created with the Microsoft WORD template. Once the applicant has completed the appropriate forms and attached the specification ABX zip package file, 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. 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 EFS 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. An ASCII text document may containing the Bio-Sequence listing may 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. New Assignments may be filed using ePAVE by filling in the required data on the Assignment screen.

#### 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.

##### EFS-ABX

EFS-ABX is the Patent Application specification authoring component of the EFS software suite. EFS-ABX is used to author electronic (XML and PDF) versions of specifications. EFS-ABX allows the user to create Patent Specifications in an easy to use Microsoft Word template.

##### ABXPDF Writer

ABXPDF Writer is used by EFS-ABX to generate the PDF files for the application-body authored by the user. It is mandatory to install ABXPDF Writer along with EFS-ABX tool.

##### Electronic Packaging and Validation Engine (ePAVE)

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

## USPTO Direct 6.0

This is the software 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.

### PatentIn and Checker

Since October 1990, the USPTO has made available to customers a set of software tools for creating biosequence listings: PatentIn and Checker. PatentIn and Checker provide customers with an efficient means to create and validate the Sequence Listing that must accompany, in paper form, or approved paper equivalent, and computer readable form (CRF), each biotechnology patent application that contains biological sequence information.

PatentIn, designed and developed in-house by the USPTO, is used by over 60 percent of customers who submit Sequence Listings. Several modifications and improvements to make PatentIn compatible for international use have occurred since 1990. Particularly, in 1996, the USPTO and the EPO began a cooperative effort to develop a Microsoft 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.

In FY03, USPTO released PatentIn 3.2.3, which can handle up to 100,000 sequences, with each sequence containing up to 4,000,000 residues. It is written in Visual C++, which makes it easily portable to any Windows-based system.

PatentIn 3.3 is an enhanced version of PatentIn 3.2.3 and contains some additional features designed to ease the authoring of sequence listings. It supports the Windows 95, Windows 98, Windows ME, Windows NT and Windows 2000. Key enhancements over PatentIn 3.2 included in PatentIn 3.3 included Users do not have to remove the sequence bases from the sequence editor and then delete the related feature and publication information in order to skip a sequence during the sequence listing generation. A checkbox has been added to the sequence window to indicate if a sequence should be skipped. The sequence will be skipped if the box is checked and all data related to the skipped sequence can remain in the PatentIn 3.3 project during the sequence listing generation. PatentIn 3.3 allows sequence type conversion between non-protein type sequences by clicking on the new AlterSeqType button on the sequence window. Direct access from the main window to the database window instead of the journal window is provided in PatentIn 3.3. The system also provides direct access from any publication window to any other publication windows. More date validations are added to PatentIn 3.3. For example: all dates entered into the sequence listing must be earlier than the current date; the Current Filing Date must be more recent than the Prior Application Filing Date; and, the Publication Date must be more recent than the Filing Date.

Checker, also designed and developed in-house by USPTO, is a module of the validation and data entry system used by STIC technicians to check and load Sequence Listings into the in-house USPTO sequence database. The software allows public users to check completed Sequence Listings before submitting them to the USPTO. Use of Checker prior to filing Sequence Listings has resulted in fewer Sequence Listing errors discovered by USPTO, therefore fewer Sequence Listings returned to Applicants for correction. Checker 4.2 features full compatibility with the Microsoft Windows 2000 and XP operating systems as well as all Office 2000/XP products.

### 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))
- EFP Program – June 20, 2004 formal contract cancellation, continued informal technical support provided. End date TBD.
- EFS 5.1 – August 23, 2004 Release of EFS-ABX authoring tool to create specifications in XML and PDF format. Upgrade ePAVE (Annex F compliant DTDs – PCT application-body.dtd v1.1, USPTO Stylesheets, 508 compliant GUI, etc.) to incorporate updated USPTO business rules regarding eSignature requirements enhanced document management and attachment.

## **Implementation of the Statement of Principles Concerning the Changeover to Electronic Data Carriers for the Exchange of Patent Documents (please make 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 granted patent documents on the USAPat CD-ROM product (see description above) to all of its international exchange partners in 1994. The product is now provided on DVD-ROM. Production and distribution of USAApp, facsimile images of patent application publications, began on schedule in March 2001. Copying of the entire USAPat back file, 1790 through 1999, onto DVD-ROM was completed in October 2002 and distributed to exchange partners.

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 USPTO 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.

The USPTO also operates a televideo-conference facility. This has been used to broadcast live meetings and lectures with officials in foreign countries.

## 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 USPTO was engaged on a number of fronts to strengthen IP administration and enforcement abroad. The USPTO hosted the "USPTO/WIPO Asia and Pacific Program for the Judiciary on Intellectual property Rights Enforcement" in Washington, D.C. for members of the appellate and Supreme court judiciary from Asia and the Pacific region on IPR protection and enforcement. The USPTO also organized a program with the Jordan Intellectual Property Association, the International Intellectual Property Institute, the Court of Appeals for the federal Circuit, and George Washington University Law School I Amman, Jordan to celebrate IP week. More than 300 lawyers, government officials, and other interested Jordanians attended this four-day program.

The Visiting Scholars and Enforcement Programs for 2003 provided participants from Bulgaria, Czech Republic, Dominican Republic, Egypt, Republic of Korea, India, Romania, Taiwan, China, El Salvador, Honduras, Nicaragua, Philippines, Turkey, Albania, Algeria, Bosnia, Brazil, Cape Verde, Croatia, Hungary, Jamaica, Kuwait, Macedonia, Morocco, Namibia, Nepal, Serbia/Montenegro, and Tunisia 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 tool of intellectual property protection as a tool for economic development.

For the second year, a USPTO official served on temporary assignment to the U.S. Embassy in Beijing to assist the embassy and U.S. rights holders on IPR issues in the People's Republic of China.

## 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 item 4 of Chapter 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.